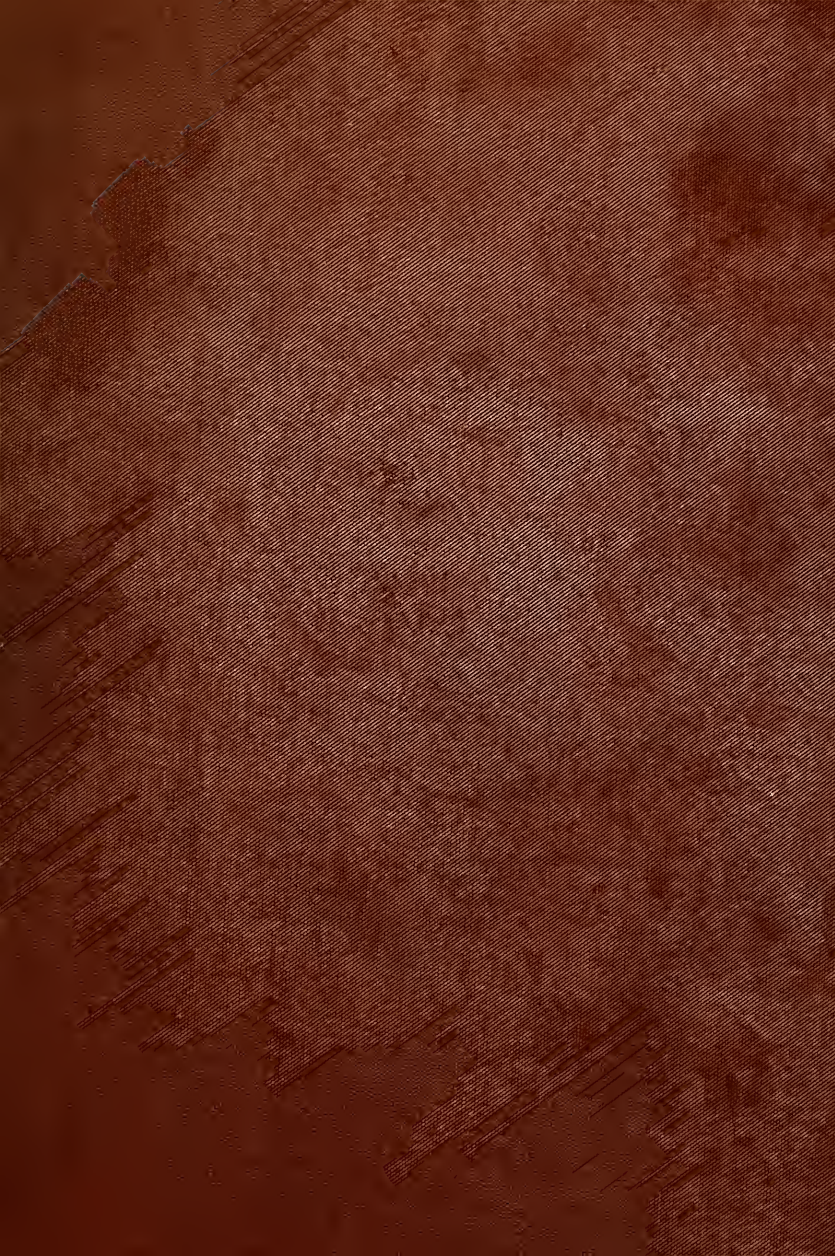




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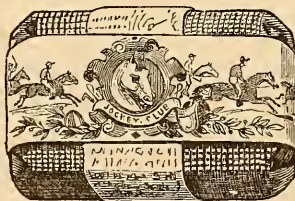
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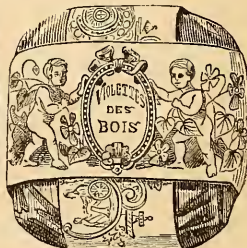
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No. 149.



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THE

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FOR 1882.

A BOOK OF REFERENCE,

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AND CONSUMPTION OF DRUGS, CHEMICALS, OILS, ETC.,

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AND

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COMPILED BY

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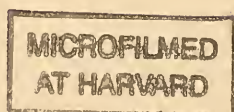
PUBLISHED BY ROOT & TINKER,

Proprietors of { THE WEEKLY DRUG NEWS,
THE OIL AND PAINT REVIEW.

102 NASSAU STREET.

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CONTENTS.

	PAGE.
Duties on Imported Goods.....	5
Original Packages.....	13
Imports of the Past Three Calendar Years.....	22
Exports from New York in 1880 and 1881.....	26
Average Export Prices.....	26
Values of Paints and Colors Imported.....	27
New York's Export Trade.....	27
The Weight of Starches.....	27
Registration of Trade Marks.....	28
Total Exports for the Fiscal Years 1880 and 1881.....	32
New French Tariff for Drugs, Oils, etc.....	33
Value of Foreign Coins.....	36
To Gauge Casks.....	36
Price of Opium in Smyrna.....	37
Crops of Turkey Opium.....	38
Prices of Quinine.....	39
Price of Opium in New York.....	39
Dispensing Solutions.....	39
Average Price of Sperm Oil.....	40
Average Price of Lard Oil.....	40
Menhaden Oil Statistics.....	40
Prices of Cottonseed Oils.....	41
Price of Calcutta Linseed Oil.....	42
Buying Linseed Oil by Weight and Selling it by Measure.....	42
The Price of Calcutta Linseed.....	43
Linseed Statistics.....	43
Nitrate of Soda Statistics.....	44
Quicksilver Statistics.....	45
The Price of Spirits Turpentine.....	46
Detection of the presence of Water in Alcohol and Ether.....	46
Thermometrical Scales.....	47
Glass Statistics.....	48

	PAGE.
No. of Lights of Window Glass per Box of 50 Feet.....	50
Value of Degrees Baumé by different Authors.....	51
Adulteration of Essential Oils.....	52
The Expansion of Water by Heat.....	53
Comparative Strengths of Preparations of Different Pharmacopœias.....	54
The Population of the Globe.....	63
The Metric System.....	64
Rules for Converting Avoirdupois Weights into Metric.....	65
Crystallization Table.....	66
Freezing Points of Alcoholic Liquids.....	67
Solvents for Iodoform.....	67
The Climate of the United States.....	68
Average Temperature.....	68
The Limit of Danger in the Use of Anæsthetics.....	69
Strengths of Solutions of Hydrobromic Acid.....	69
Free List.....	70
Pharmaceutical Associations.....	72
To Measure Goods for Shipment.....	76
Solubility of Sodium and Potassium Salts.....	77
Rules for Converting Specific Gravity into Degrees Baumé.....	77
Patents Granted during 1881.....	78
The New York Adulteration Act.....	151



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AND
THE OIL AND PAINT REVIEW,

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THE DRUGGISTS' ANNUAL.

DUTIES ON IMPORTED GOODS.

THE following list of articles comprises all the goods in the trades represented which are imported into the United States and on which an import duty is levied, either specific or *ad valorem*. The arrangement is in alphabetical order, as this is believed to be more convenient than the classified list published by the Bureau of Statistics ; conciseness, intelligibility, and convenience of reference being the desiderata governing the compilation, which, it is hoped, will meet the approval and appreciation of the trade :

- Absinthe, \$2 $\text{\textcircled{P}}$ proof gallon.
- “ in bottles, 3 cents $\text{\textcircled{P}}$ bottle additional.
- Acetate, Ammonia, 25 cents $\text{\textcircled{P}}$ lb.
- “ Baryta, 25 cents $\text{\textcircled{P}}$ lb.
- “ Copper, 10 cents $\text{\textcircled{P}}$ lb.
- “ Iron, 25 cents $\text{\textcircled{P}}$ lb.
- “ Lead, brown, 5 cents $\text{\textcircled{P}}$ lb.
- “ “ white, 10 cents $\text{\textcircled{P}}$ lb.
- “ Lime 25%, ad val.
- “ Magnesia, 50 cents $\text{\textcircled{P}}$ lb.
- “ Potassa, 25 cents $\text{\textcircled{P}}$ lb.
- “ Soda, 25 cents $\text{\textcircled{P}}$ lb.
- “ Strontia, 25 cents $\text{\textcircled{P}}$ lb.
- “ Zinc, 25 cents $\text{\textcircled{P}}$ lb.
- Acid, Acetic and Acetous, of specific gravity of 1.047 or less, 5 cents $\text{\textcircled{P}}$ lb.
- “ “ of spec. grav. over 1.047, 30 cents $\text{\textcircled{P}}$ lb.
- “ Benzoic, 10% ad val.
- “ Carbolic, liquid, 10% ad val.
- “ Chromic, 15% ad val.
- “ Citric, 10 cents $\text{\textcircled{P}}$ lb.
- “ Cresylic, 10% ad val.
- “ Crysophanic, 10% ad val.
- “ Gallic, \$1 $\text{\textcircled{P}}$ lb.
- “ Hydric, 10% ad val.
- “ Nitric, 10% ad val.
- “ Pyroligneous, of spec. grav. of 1.047 or less, 5 cents $\text{\textcircled{P}}$ lb.
- “ “ “ over 1.047, 30 cents $\text{\textcircled{P}}$ lb.
- “ Sulphuric, fuming, 1 cent $\text{\textcircled{P}}$ lb.
- “ Tannic, \$1 $\text{\textcircled{P}}$ lb.
- “ Tartaric, 15 cents $\text{\textcircled{P}}$ lb.
- “ all other of every description, used for medicinal purposes or in the fine arts, not otherwise provided for, 10% ad val.

- Aconitin, 40% ad val.
Ale, in bottles, 35 cents p gallon.
 " otherwise than in bottles, 20 cents p gallon.
Almonds, 6 cents p lb.
 " shelled, 10 cents p lb.
Almond Meal, 20% ad val.
Alum, patent alum, alum substitute, sulphate of alumina, and aluminous cake,
 60 cents p 100 lb.
Ammonia, and sulphate and carbonate, 20% ad val.
 " acetate of, 25 cents p lb.
 " sal and muriate, 10% ad val.
Anhydrous Chloride of Calcium, 20% ad val.
Aniline Dyes and Colors, by whatever name known, 50 cts. p lb. and 35% ad val.
Antimony, crude and regulus, 10% ad val.
Apiol, 40% ad val.
Argols, other than crude, 6 cents p lb.
Aromatic Cachous, or other perfumeries or cosmetics, by whatsoever name
 known, used or applied as perfumes, or applications to the mouth or skin,
 50% ad val.
Arracks, \$2 p proof gallon.
 " if in bottles, 3 cents p bottle additional.
Arrowroot, 30% ad val.
 " flour and starch, 3 cents p lb. and 20 % ad val.
Asafoetida, 20% ad val.
Asbestos, manufactured, 25% ad val.
Asphaltum, 25% ad val.
Atropia, 40% ad val.
Balsams, used for medicinal purposes, not otherwise provided for, 30% ad val.
Barytes, and sulphate of, $\frac{1}{2}$ cent p lb.
 " nitrate of, 20% ad val.
Bath Pipe, 40% ad val.
Bay Leaves, oil of, essential or essence, 50 cents p ounce.
 " or Laurel Oil, fixed or expressed, 20 cents p lb.
 " Rum or Bay Water, whether distilled or compounded, \$1 p gallon of first
 proof, and in proportion for any greater strength.
 " Rum essence or oil, 50 cents p ounce.
Beer, in bottles, 35 cents p gallon.
 " otherwise than in bottles, 20 cents p gallon.
Beeswax, 20% ad val.
Benzine and Benzole, refined or produced from the distillation of coal, asphaltum
 shale, peat, petroleum or rock-oil, or other bituminous substances used for
 like purposes, 40 cents p gallon.
Benzoates, 30% ad val.
Berlin Blue, 25% ad val.
Bitters, containing spirits, or similar spirituous beverages, \$2 p proof gallon.
 " if in bottles, 3 cents p bottle additional.
Black of Bone, or ivory drop black, 25% ad val.
Blacking of all descriptions, 30% ad val.
Blanc-fixe, enameled white, satin white, lime white, and all combinations of
 barytes with acids or water, 3 cents p lb.

- Borax, refined, 10 cents ℥ lb.
 Brandy and other spirits, manufactured or distilled from grain or other materials, and not otherwise provided for, \$2 ℥ proof gallon.
 Bremen Blue, 30% ad val.
 Brimstone, in rolls or refined, \$10 ℥ ton.
 Bristles, 15 cents ℥ lb.
 Bromide of Potassium, 40% ad val.
 Bronze Liquor, 10% ad val.
 " Powder, 20% ad val.
 Calomel, 30% ad val.
 Camphor, refined, 5 cents ℥ lb.
 Candles, Stearine and Adamantine, 5 cents ℥ lb.
 " Spermaceti, Paraffine, and Wax, pure or mixed, 8 cents ℥ lb.
 " all other, $2\frac{1}{2}$ cents ℥ lb.
 Carmine, 20% ad val.
 " Lake, dry or liquid, 35% ad val.
 Cassia and Cassia-vera, 10 cents ℥ lb.
 " Buds and Ground Cassia, 20 cents ℥ lb.
 Castor Beans, ℥ bushel of 50 lbs., 60 cents ℥ bushel.
 " Oil, \$1 ℥ gallon.
 Caustic Soda, $1\frac{1}{2}$ cents ℥ lb.
 Cayenne, 5 cents ℥ lb.
 " ground, 10 cents ℥ lb.
 Celery Seed, 20% ad val.
 Cenne Oil, 30 cents ℥ gallon.
 Chamois Skins, 20% ad val.
 Chian Turpentine, 40% ad val.
 Chicccory Root, ground or unground, 1 cent ℥ lb.
 " " burnt or prepared, 5 cents ℥ lb.
 Chinese Blue, 25% ad val.
 Chinoidine, 40% ad val.
 Chloroform, \$1 ℥ lb.
 Chrome Yellow, 25% ad val.
 Cinchonidia, Sulphate, 40% ad val.
 Cinnamon, 20 cents ℥ lb.
 Cloves, 5 cents ℥ lb.
 " oil of, \$2 ℥ lb.
 " stems, 3 cents ℥ lb.
 Coal Oil, crude, 15 cents ℥ gallon.
 Cobalt, oxide of, 20% ad val.
 Cocoa, prepared or manufactured, 2 cents ℥ lb.
 Cognac Oil, or Ceanthie Ether, \$4 ℥ ounce.
 Collodion, \$1 ℥ lb.
 Cologne Water and other Perfumery, of which alcohol forms the principal ingredient, \$3 ℥ gallon, and 50% ad val.
 Coloring for Brandy, 50% ad val.
 Combs of all kinds, 35% ad val.
 Conserve of Roses, 35% ad val.
 Copperas, Green Vitriol, or Sulphate of Iron, $\frac{1}{2}$ cent ℥ lb.

Cordials, \$2 $\text{\textcircled{P}}$ proof gallon.

“ if in bottles, 3 cents $\text{\textcircled{P}}$ bottle additional.

Corks and Cork Bark, manufactured, 30% ad val.

Cosmetics, by whatsoever name known, used or applied as perfumes, or applications to the hair, mouth or skin, 50% ad val.

Cottonseed Oil, 30 cents $\text{\textcircled{P}}$ gallon.

Court Plaster, 35% ad val.

Crayons of all kinds, 30% ad val.

Cream Tartar, 10 cents $\text{\textcircled{P}}$ lb.

Croton Oil, \$1 $\text{\textcircled{P}}$ lb.

Cubebs, oil of, \$1 $\text{\textcircled{P}}$ lb.

Dandelion Root, 3 cents $\text{\textcircled{P}}$ lb.

Dentifrices, by whatsoever name known, used or applied as perfumes, or applications to the mouth, 50% ad val.

Drugs, medicinal and other, not otherwise provided for, 20% ad val.

Dutch Pink, 25% ad val.

Emery, manufactured, ground, or pulverized, 1 cent $\text{\textcircled{P}}$ lb.

Epsom Salts, 1 cent $\text{\textcircled{P}}$ lb.

Essences or Extracts, by whatsoever name known, used or applied as perfumes, or applications to the hair, mouth or skin, 50% ad val.

Ethers of all kinds, not otherwise provided for, and Etherial Extracts, fluid, \$1 $\text{\textcircled{P}}$ lb.

Finishing Powder, 20% ad val.

Fish Oil, 20% ad val.

“ Skins, 20% ad val.

Flax Seed, 20 cents $\text{\textcircled{P}}$ bushel, of 56 lbs. $\text{\textcircled{P}}$ bushel.

“ Oil, 30 cents $\text{\textcircled{P}}$ gallon, $7\frac{1}{2}$ lbs. to gallon.

Frankfort Black, 25% ad val.

French Chalk, 20% ad val.

“ Green, dry or moist, 30% ad val.

Fruit Ethers, essence or oil of apples, pear, peach, apricot, strawberry, and raspberry, made of fusel oil or of fruit, or of imitation thereof, \$2.50 $\text{\textcircled{P}}$ lb.

Fuller's Earth, \$3 $\text{\textcircled{P}}$ ton.

Fusel Oil or Amylic Alcohol, \$2 $\text{\textcircled{P}}$ gallon.

Gelatine and all similar preparations, not otherwise provided for, 35% ad val.

Gin, \$2 $\text{\textcircled{P}}$ proof gallon.

“ if in bottles, 3 cents $\text{\textcircled{P}}$ bottle additional.

Ginger, ground, 3 cents $\text{\textcircled{P}}$ lb.

“ preserved or pickled, 35% ad val.

“ essence of, 35% ad val.

“ Ale, 20% ad val.

Glass, plates or disks, unwrought, for optical instruments, 10% ad val.

Glass, unpolished cylinder, crown and common window, not exceeding 10×15 inches, $1\frac{1}{2}$ cents $\text{\textcircled{P}}$ lb.

above that, not exceeding 16×24 inches, 2 cents $\text{\textcircled{P}}$ lb.

above that, not exceeding 24×30 inches, $2\frac{1}{2}$ cents $\text{\textcircled{P}}$ lb.

all above 24×30 inches, 3 cents $\text{\textcircled{P}}$ lb.

“ Cylinder and Crown, polished, not exceeding 10×15 in., $2\frac{1}{2}$ cts. $\text{\textcircled{P}}$ sq. ft.

above that, and not exceeding 16×24 inches, 4 cents lb sq. ft.

above that, and not exceeding 24×30 inches, 6 cents $\text{\textcircled{P}}$ sq. ft.

THE DRUGGISTS' ANNUAL.

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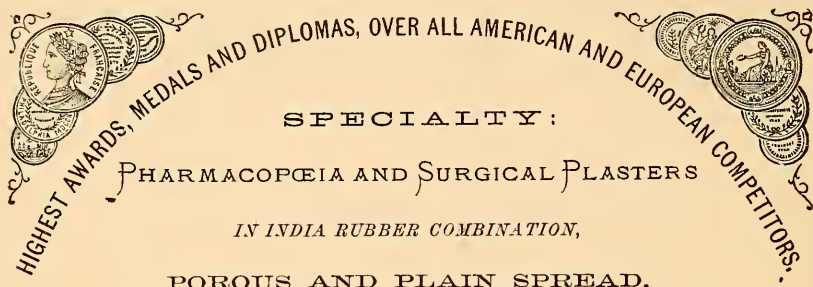
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EVERY VARIETY OF SURGICAL AND ANTISEPTIC DRESSINGS.

Pharmacists will have the kindness to bear in mind that we manufacture but **ONE QUALITY** of Medicinal and Surgical Plasters. When a physician prescribes an official preparation, he invariably expects such an article to be of pharmacopœia strength. To depart from established formula, or to cheapen medicinal preparations by the introduction of inferior drugs or extracts, is simply reprehensible. Such preparations not only baffle the acknowledged skill of practitioners, but also reflect disadvantageously the judgment and intelligence of the dispensing pharmacist or druggist. It has never been our aim, and never will be, to calculate how cheap we can produce a suspicious class of medicinal articles.

The extensive demand united with our unequalled facilities for the economical production of our specialties, enables us to offer the best quality of *elegant and unimpeachable goods* at *exceptionally low prices*. They are skillfully made of purified india rubber, selected drugs, and incorporated with an unquestionable quality of alcoholic medicinal extracts. Every pharmacopœia article is warranted to be of proper strength and guaranteed to give *perfect satisfaction* in every respect.

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The Trade are cautioned against purchasing articles that are either counterfeits or imitations of our own trade marks or styles. We have already proceeded against several firms for infringing on our trade marks.

Office and Salesroom: 21 Platt St.,

NEW YORK CITY.

- Glass, above that, and not exceeding 24×60 inches, 20 cents p sq. ft.
 all above that, 40 cents p sq. ft.
- “ Fluted, rolled or rough plate, not including crown, cylinder, or common window, not exceeding 10×15 inches, 75 cents p 100 sq. ft.
 above that, and not exceeding 16×24 inches, 1 cent p sq. ft.
 above that, and not exceeding 24×30 inches, $1\frac{1}{2}$ cent p sq. ft.
 all above that, 2 cents p sq. ft.
- “ Cast or Polished Plate, unsilvered, not exceeding 10×15 in., 3 cts. p sq. ft.
 above that, and not exceeding 24×30 inches, 5 cents p sq. ft.
 above that, and not exceeding 24×30 inches, 8 cents p sq. ft.
 above that, and not exceeding 24×60 inches, 25 cents p sq. ft.
 all above that, 50 cents p sq. ft.
- “ Cast Polished Plate, silvered, or looking-glass plates, not exceeding 10×15 inches, 4 cents p sq. ft.
 above that, and not exceeding 16×24 inches, 6 cents p sq. ft.
 above that, and not exceeding 24×30 inches, 10 cents p sq. ft.
 above that, and not exceeding 24×60 inches, 35 cents p sq. ft.
 all above that, 60 cents p sq. ft.
- Glauber Salts, $\frac{1}{2}$ cent p lb.
- Glucose, 20% ad val.
- “ burnt, beer coloring, 50% ad val.
- Glue, 20% ad val.
- Glycerine, 30% ad val.
- Grease, all not specified, 10% ad val.
- Gum Substitute, or Burnt Starch, 10% ad val.
- Hair Dressings, Hair Restoratives, Hair Dyes, Hair Oils, by whatsoever name known, used as perfumes or applications to the hair, 50% ad val.
- Hair of Hogs, 1 cent p lb.
- “ Pencils, 30% ad val.
- Hemp Seed, and other oil seeds of like character other than linseed and flaxseed, $\frac{1}{2}$ cent p lb.
- Hempseed Oil, 23 cents p gallon.
- Hoffman's Anodyne, 50 cents p lb.
- Honey, 20 cents p gallon.
- Hops, 8 cents p lb.
- Hydrosulphate of Soda, 20% ad val.
- Indian Red, 25% ad val.
- Indigo, extract of, 10% ad val.
- Ink and Ink Powders, 35% ad val.
- Iodine, salts of, 15% ad val.
- “ resublimed, 75 cents p lb.
- Iron Liquor, 10% ad val.
- Jellies of all kinds, 50% ad val.
- Kirschwasser, $\$2$ p proof gallon.
- Lamp-black, 20% ad val.
- Lead in pigs and bars, 2 cents p lb.
- “ nitrate of, 3 cents p lb.
- Lemon Juice, 10% ad val.
- “ oil of, 50 cents p lb.
- Licorice Paste, or Licorice in rolls, 10 cents p lb.

Licorice Juice, 5 cents ℥ lb.

Lime, 10% ad val.

“ Juice, 10% ad val.

Linseed, 20 cents ℥ bushel, 56 lbs. to bushel.

Linseed oil, 30 cents ℥ gallon, 7½ lbs. to gallon.

Litharge, dry or ground in oil, 3 cents ℥ lb.

Liqueurs, \$2 ℥ proof gallon.

Logwood and other Dyewoods, extracts and decoctions of, 10% ad val.

Mace, 25 cents ℥ lb.

Magnesia, Calcined, 12 cents ℥ lb.

“ Carbonate, 6 cents ℥ lb.

“ Citrate of, 40% ad val.

Medicinal Preparations, not otherwise provided for, 40% ad val.

Mercurial Preparations, not otherwise provided for, 20% ad val.

Mineral Blue, dry or moist, 30% ad val.

“ Green, dry or moist, 30% ad val.

Mineral Kermes, 10% ad val.

Mineral or Medicinal Water, artificial, for each bottle or jug containing not more than 1 quart, 3 cents and 25% ad val.

“ containing more than 1 quart, 3 cents for each additional quart or fractional part thereof, and 25% ad val.

“ otherwise than in bottles, 30% ad val.

Morphia, and all salts of morphia, \$1 ℥ ounce.

Mustard, ground in bulk, 10 cents ℥ lb.

“ when inclosed in glass or tin, 14 cents ℥ lb.

“ Oil, not salad, 25 cents ℥ gallon.

Naphtha, refined or produced from the distillation of coal, asphaltum, shale, petroleum or rock oil, or other bituminous substances used for illuminating purposes, 40 cents ℥ gallon.

Neatsfoot Oil, and all animal, 20% ad val.

Nitric Ether, spirits of, 50 cents ℥ lb.

Nutmegs, 20 cents ℥ lb.

Ochers and ochery earths, not otherwise provided for, dry, 50 cents ℥ 100 lbs.

“ when ground in oil, \$1.50 ℥ 100 lbs.

Oils, expressed, not otherwise provided for, 20% ad val.

Olive Oil, in flasks or bottles, \$1 ℥ gallon.

“ not salad, 25 cents ℥ gallon.

Orange Oil, 50 cents ℥ lb.

Opium, \$1 ℥ lb.

“ prepared for smoking, and all other preparations of, not otherwise provided for, \$6 ℥ lb.

Paint and Painters' Colors (except white and red lead and oxide of zinc), dry or ground in oil, not otherwise provided for, 25% ad val.

Paper Boxes, and all other fancy boxes, 35% ad val.

Paraffine, 10 cents ℥ lb.

Paris White, 1 cent ℥ lb.

“ “ ground in oil, 1½ cents ℥ lb.

Paris Green, 30% ad val.

Patent Size, 20% ad val.

Pepper, black and white, 5 cents ℥ lb.

Petroleum or Rock Oil, crude, 20 cents P gallon.

Pimento, 5 cents P lb.

“ all kinds, ground, 10 cents P lb.

Pitch, 20% ad val.

Plaster of Paris, when ground or calcined, 20% ad val.

Polishing Powders of all descriptions, 25% ad val.

Pomades or Hair Dressings, by whatsoever name known, used or applied as perfumes, or applications to the hair, 50% ad val.

Porter, in bottles, 35 cents P gallon.

“ otherwise than in bottles, 20 cents P gallon.

Potash, Acetate, 25 cents P lb.

“ Bichromate, 4 cents P lb.

“ Chlorate, 3 cents P lb.

“ Hydriodate, 75 cents P lb.

“ Iodate, 75 cents P lb.

“ Iodide, 75 cents P lb.

Proprietary Medicines, pills, powders, tinctures, troches or lozenges, syrups, cordials, bitters, anodynes, tonics, plasters, liniments, salves, ointments, pastes, drops, waters, essences, spirits, oils, or other medicinal preparations or compositions recommended to the public as proprietary medicines, or prepared according to some private formula or secret art, as remedies or specifics for any disease or diseases, or affections whatever affecting the human or animal body, 50% ad val.

Prussian Blue, dry or moist, 30% ad val.

Prussiate of Potash, red, 10 cents P lb.

“ “ yellow, 5 cents P lb.

Putty, \$1.50 P 100 lbs.

Rape Seed, and other oil seeds of like character, other than linseed and flax seed, $\frac{1}{2}$ cent P lb.

Rapeseed Oil, 23 cents P gallon.

Ratafia, \$2 P proof gallon.

Red Chalk, 20% ad val.

“ Lead, dry or ground in oil, 3 cents P lb.

“ Precipitate, 20% ad val.

Resins, Gum, not otherwise provided for, 20% ad val.

Rochelle Salts, 5 cents P lb.

Roman Cement, 20% ad val.

Rose Pink, 25% ad val.

Rosin, 20% ad val.

Rum Essence or Oil, 50 cents P ounce.

Salad Oil, in flasks or bottles, \$1 P gallon.

Saleratus, $1\frac{1}{2}$ cents P lb.

Sal Soda, $\frac{1}{2}$ cent P lb.

Saltpeter, crude, 1 cent P lb.

“ refined and partially refined, 2 cents P lb.

Salt, preparations of, not otherwise provided for, 20% ad val.

Santonine, \$3 P lb.

Seal Oil, 20% ad val.

Sealing Wax, 35% ad val.

Silicate of Soda, or other alkaline silicates, $1\frac{1}{2}$ cents P lb.

Smalts, 20% ad val.

Soaps, fancy, perfumed, honey, transparent, and all descriptions of toilet and shaving, 10 cents p lb. and 25% ad val.

“ not otherwise provided for, 1 cent p lb. and 30% ad val.

Soda Ash, $\frac{1}{4}$ cent p lb.

“ Arseniate of, 20% ad val.

“ Bicarbonate, $1\frac{1}{2}$ cents p lb.

“ all carbonates of, by whatever name designated, not otherwise provided for, 20% ad val.

Spanish Brown, 25% ad val.

Sponges, 20% ad val.

Strychnia, \$1 p ounce.

Strychnine, Salts of, not otherwise provided for, \$1.50 p ounce.

Sulphur, flour of, \$20 p ton.

Sumac, 10% ad val.

Tallow, 1 cent p lb.

Tannin, \$2 p lb.

Tartar Emetic, 15 cents p lb.

Tar, 20% ad val.

Tin, oxide, muriate, and salts of, and tinfoil, 30% ad val.

Toilet Waters, by whatsoever name known, used or applied as perfumes, or applications to the hair, mouth, or skin, 50% ad val.

Tooth Washes or Tooth Pastes, by whatsoever name known, used or applied as perfumes, or applications to the mouth, 50% ad val.

Turpentine, spirits of, 30 cents p gallon.

Ultramarine, 6 cents p lb.

Umber, 50 cents p 100 lbs.

Vandyke Brown, 20% ad val.

Varnish, valued at \$1.50 or less p gallon, 50 cents p gall. and 20% ad val.

“ valued at above \$1.50 p gall., 50 cents p gall. and 25% ad val.

Venetian Red, 25% ad val.

Vermilion, 25% ad val.

Vitriol, White, or sulphate of zinc, 20% ad val.

“ Blue, 4 cents p lb.

Water Colors, 35% ad val.

Whale Oil, 20% ad val.

White Lead, dry or ground in oil, 3 cents p lb.

Whiting, 1 cent p lb.

“ ground in oil, 2 cents p lb.

Wines, imported in casks, containing not more than 22% alcohol, and on all still wines in casks or bottles, 40 cents p gall.

“ of all kinds imported in bottles, and not otherwise provided for, containing each not more than 1 quart and more than 1 pint, \$1.60 p doz.

“ containing each not more than 1 pint, 80 cents p doz. But all bottles containing 1 quart or less than 1 quart, and more than 1 pint, shall be held to contain 1 quart; and all bottles containing 1 pint or less shall be held to contain 1 pint, and shall pay in addition 3 cents for each bottle.

Wood Lake, 25% ad val.

Zinc, Oxide of, dry or ground in oil, $1\frac{1}{4}$ cents p lb.

NOTE.—Upon all articles of the growth or produce of countries east of the Cape of Good Hope, when imported from places west of the Cape of Good Hope, there is a duty of ten per cent. (10%) ad valorem in addition to the duties named in the schedule, or upon goods otherwise free. The ton is reckoned at 2,240 pounds. An allowance of 5% is allowed on sparkling wines and malt liquors in lieu of all breakage. Articles not found by name may be governed by a general provision, otherwise they are free, and may be found in the “Free List.”

SEVEN GRAND WORLD'S FAIR MEDALS
HAVE BEEN AWARDED FOR
SOLUBILITY AND SUPERIORITY OF
WARNER & CO.'S
SUGAR-COATED PILLS.

An experience of Twenty-five Years leads to the belief that Sugar, properly applied, is the only material with which to coat Pills.



WARNER & CO.'S
CACHOU AROMATISE,

For Perfuming the Breath and Imparting a Pleasant Flavor.

These Cachous are coated with pure SILVER FOIL, and are composed of the finest and most fragrant aromatics.

No deleterious effect need therefore be anticipated from their use.

They are pronounced superior to any other brand in the market, either foreign or domestic.

LIST OF PRICES.

Per Gross in Patent, Metal, Slide Boxes, . . .	\$ 9 00
Per Gross in 2-oz. Blue Bottles, French Label, . . .	30 00
Per Pound, in Handsome Glass Labeled and Stoppered Bottles, ...	2 25
Per Pound in bulk, ...	1 75

Avoid inferior imitations coated with Dutch Metal which are offered for refilling these Bottles.

PREPARED BY
WM. R. WARNER & CO.,
1228 Market St., Phila., & 49 Cedar St., New York.

THE DRUGGISTS' ANNUAL.

FOR DRUGGISTS!

LUCAS'

"PREPARED PAINTS"

Ready Mixed, 1 to 5 Pound Cans.

THEY PLACE THE DRUGGIST ON SAME FOOTING AS A MANUFACTURER. SEND FOR PARTICULARS.

LUCAS' GREENS,
"SWISS"

AND

"IMPERIAL FRENCH,"

ALWAYS RELIABLE, DURABLE,
SALABLE.

THE BEST COLORS.

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ORIGINAL PACKAGES.

THE following list of articles, giving the weights and measures of original packages, will be found the nearest complete of any ever published. The weights and measures indicated are those ordinarily found in this market, but packages of any particular size can not always be obtained. Tares, in most instances, are actual weight, but on many articles none is allowed, while on others custom has made arbitrary rules allowing considerably less than the actual tare.

Acid, Benzoic, German	boxes 1 lb
“ “ English	boxes 50 ozs
“ Carbolic, pure	bottles 1 lb
“ “ powder	kegs 1 cwt
“ “ liquid	casks 40 galls
“ Citric	kegs 112 lbs
“ Oxalic	casks 5 cwt.; 500 to 800 lbs
“ Picric, crystals	cases 1 cwt
“ Tartaric	casks 5 cwt.; 600 to 800 lbs
“ “ powder	boxes 50 lbs and bbls. 275 lbs
Aconite Leaves	bales 150 to 200 lbs
“ Root	bales 200 to 300 lbs
Alkanet	bales 200 to 300 lbs
Almonds	serons varying from 1½ to 2 cwt
“	baskets varying from 1½ to 1½ cwt
“ Jordan	boxes 25 lbs
Aloes, Barbadoes	gourds 10 to 20 lbs
“ Cape	cases 300 to 500 lbs
“ Socotrine	boxes 50 to 75 lbs and kegs 75 to 100 lbs
Alum.	300-lb barrels, casks 3 to 4 cwt., tierces 10 cwt
Ammonia, Carb., English	casks (inv. weight and tare) 500 to 600 lbs., kegs 1 cwt
“ “ American	casks 400 to 500 lbs
“ muriate	casks (inv. weight and tare) 900 to 1,100 lbs
“ sulphate	casks (inv. weight and tare) 900 to 1,100 lbs., bags 2 cwt
“ nitrate	bags about 150 lbs
Aniseed, Italian	bales about 250 lbs
“ “	bags about 125 lbs
“ German	bags about 125 lbs
“ star	cases ¼-picul and 1 picul
Annatto	7-lb boxes, baskets 49 to 50 lbs
“	cases nearly 2½ cwt
Antimony, powdered	boxes 100 lbs
“ “	barrels about 500 lbs.; 7 cwt
“ lump	casks 10 cwt
“ golden sulphuret	casks 5 cwt
Argols, refined	casks 800 to 1,000 lbs
“ red Oporto	casks 400 to 500 lbs

Arnica Flowers	pressed bales about 100 lbs
Arrowroot, Bermuda	kegs 1 cwt., or about 125 lbs
“ St. Vincent	barrels about 200 lbs
“ “	tins about 25 lbs
“ “	kegs 1 cwt
“ West India	bbls. 200 to 250 lbs
“ “	cases about 28 lbs
Arsenic, white, powder	casks 3 to 4 cwt
“ lump	kegs 2 cwt
“ red	(inv. weight) kegs 110 to 220 lbs
Asbestos	kegs, bbls. and casks, 110 to 700 lbs
Ashes, American	casks 3½ to 5 cwt
“ St. Petersburg	casks 10 cwt
Asphaltum, Cuban	casks 600 to 1,500 lbs
“ Syrian	cases 200 to 400 lbs
“ Trinidad	bbls. and casks, 300 to 1,000 lbs
Balsam Copaiba	kegs 80 to 120 lbs
“ “	bbls. about 300 lbs
“ “	cans about 40 lbs
“ Fir	bbls. about 40 galls
“ Peru	drums about 30 and 112 lbs
“ “	cans 20 to 40 lbs
“ Tolu	cans (tare 1 lb.), about 10 lbs., 12 in a case
Bark, Calisaya	serons 125 to 150 lbs
“ Cascarilla	bags 50 to 100 lbs
“ Logwood, Jam	bags 40 to 70 lbs
“ Loxa	serons 125 to 150 lbs
“ Mezereon	bales about 100 lbs
“ Sassafras	bags, bbls., casks, 25 to 500 lbs
“ Quercitron	(no tare) kegs about 100 lbs
“ Simaruba	bales about 200 lbs
“ Soap	bales 200 to 400 lbs
“ Yellow	serons 125 to 150 lbs
“ Red	serons 125 to 150 lbs
Bath Brick	casks 300 to 800; bbls. about 100
Barytes, Sulphate, grnd.	casks 4 to 5 cwt
Bay Rum	punch. 100 to 112 galls., bbls. about 40 galls
Beans, Calabar	cases 120 lbs
“ Vanilla	cans 20 lbs
Beeswax, American	cases 1 cwt
“ White	parcels 4 lbs and boxes 50 lbs
Bisulphide of Carbon	drums 12 galls
Bittersweet Stems	bales 100 to 200 lbs
Bleaching Powders	casks 7 cwt., or 600 to 800 lbs
Blue Vitriol	bbls. about 350 lbs
Bole, Armenia	casks about 550 lbs
Borax, refined	cases 112 lbs. and bbls. about 300 lbs., 3 to 4 cwt
Burgundy Pitch	stands 110 lbs
Calomel, English	1-lb. bottles, 50 in a case
“ American	1-lb. bottles, 50 in a case

Camphor, refined.....	boxes 100 lbs and bbls. 175 to 225 lbs
“ crude.....	cases about 125 lbs
Cantharides, Chinese.....	cases 60 to 125 lbs
“ Russian.....	cases and casks, 100 to 250 lbs
Cascara Sagrada.....	bags 50 to 200 lbs
Cassia.....	mats about 4 lbs., 14 to 16 in bale
“ loose.....	cases about 100 lbs
Cassia Buds.....	cases $\frac{1}{2}$ picul and 1 picul
Castile Soap, white.....	boxes (8 lbs. tare), about 35 lbs
“ “ mottled.....	boxes (4 lbs. tare), about 35 lbs
Castor Oil, East India.....	40-lb. tins, 4 in a case
“ Bombay.....	casks 3 cwt
Chalk Crayons.....	boxes 25 and 50 lbs
“ Drops.....	boxes 25 and 50 lbs
“ White.....	bbls. about 300 lbs
China Clay.....	(inv. weight) casks $\frac{1}{2}$ ton
Chamomiles, Roman.....	casks from 200 to 300 lbs
“ German.....	casks from 125 to 300 lbs
“ Belgian.....	bales 1 cwt
Cinnamon.....	bales 92 $\frac{1}{2}$ lbs
Cloves.....	bales about 140 lbs
“.....	mats 80 lbs
“.....	chests 200 lbs
Cobalt, Crystals.....	kegs 110 to 150 lbs
Cocculus Indicus.....	bags 40 to 100 lbs
Cochineal.....	bags and serons 150 to 200 lbs
Cocoa.....	casks 1 $\frac{1}{4}$ cwt. and bags 1 cwt
Cod Liver Oil, Norwegian.....	bbls. 30 galls
Colocynth Apples.....	cases and casks 50 to 200 lbs
Colza Oil.....	tins 12 galls. and casks 40 galls
Copper, sulphate.....	casks 3 cwt
Copperas, green.....	bbls. 300 lbs
“ white.....	casks 4 to 5 cwt
Colombo Root.....	bags about 120 lbs
Cottonseed Oil.....	barrels or casks, and tins 12 galls
Cotton, East India.....	bales 320 to 360 lbs
“ Brazil.....	bales 160 to 200 lbs
“ Egyptian.....	bales 180 to 280 lbs
“ Virginia,	}.....bales 300 to 310 lbs
“ Carolina,	
“ Georgia,	
“ West Indies,	
“ New Orleans,	}.....bales 400 to 500 lbs
“ Alabama,	
Cream Tartar, crystals.....	casks 10 cwt., or 600 to 900 lbs
“ powdered.....	bbls. 250 to 325 lbs
Crocus Martis.....	kegs 112 lbs
Cubebs.....	bags about 100 lbs
Cudbear.....	casks 600 to 900 lbs
Cuttlefish Bone.....	(tare 50 lbs. strap of 4 boxes) straps 100 lbs

Cutch	bales 100 to 150 lbs
Emery	kegs about 250 lbs
Ergot	cases, bags and casks, 100 to 300 lbs
Farina, German	bags 2 cwt
Flowers, Arnica	bales 100 to 300 lbs
“ Elder	bales 80 to 300 lbs
“ Lavender	bales 200 to 300 lbs
“ Maloa	bales 150 to 200 lbs
Galls	sacks 3½ cwt
Gambier	bales 50 to 300 lbs
Gelatine, Cox's	casks 8 to 12 gross
“ French	cases 50 to 100 lbs
Gentian Root	bales about 150 lbs
Ginger, East India	bags 1 cwt
“ African	bags about 125 lbs
“ Cochin	bbls. 1 cwt
“ Jamaica	bbls. about 125 lbs
“ Race	bags about 125 lbs
Glaubers Salts	bbls. 3 cwt
Glycerine	drums 1,000 to 1,200 lbs
“ Sarg's, bulk	50-lb. cans, 4 in a case and bbls. about 430 lbs
“ “	1-lb. bottles, 50 in a case
Glue	casks or skins, or baskets
Glucose, liquid	casks 8 cwt
Grains of Paradise	bags 1 cwt., and casks to 500 lbs
Grindelia Robusto	bags 50 to 150 lbs
Guarana	cases about 200 lbs
Gum Aloes, Barbadoes	boxes and casks 50 to 300 lbs
“ “ Cape	(tare 18%) cases 200 to 500 lbs
“ “ Curacoa	boxes 50 to 100 lbs
“ “ Socotrine	boxes and kegs 60 to 150 lbs
“ Arabic, sorts	bales from 350 to 500 lbs
“ “ picked	cases from 200 to 300 lbs
“ “ East India	chests 6 cwt
“ “ Turkey	chests 4 cwt
“ Asafœtida	cases from 200 to 400 lbs
“ Benzoin	cases about 200 to 250 lbs
“ Copal	cases about 200 lbs
“ Damar	cases 150 to 200 lbs
“ Galbanum	cases 250 to 300 lbs
“ Gamboge	cases ½ picul and 1 picul
“ Guaiacum	cases from 100 to 200 lbs
“ Kino	cases 100 to 200 lbs
“ Mastie	cases 100 to 200 lbs
“ Myrrh, Turkey	bags about 100 lbs
“ “ East India	cases about 250 lbs
“ Olibanum	cases 200 to 400 lbs
“ Sandrac	cases 300 to 400 lbs
“ Seedlac	cases 200 to 250 lbs
“ Shellac	cases from 150 to 200 lbs

Gum Spruce.....	bbls. 100 to 150 lb
“ Tragacanth, sorts.....	cases 250 to 400 lbs
“ “ flakes.....	cases 200 to 300 lbs
Haarlem Oil.....	cases 10 gross
Honey, Cuban.....	barrels and tierces 40 to 60 galls
“ Californian.....	tins 56 lbs
Hops, American.....	square bales about 1½ cwt
“ Bavarian.....	bales 3 cwt
“ English.....	pockets about 1¼ to 1½ cwt
Indigo, Bengal.....	cases about 350 lbs
“ Guatemala.....	serons about 150 lbs
“ Madras.....	cases about 200 lbs
“ Manila.....	cases about 200 lbs
Insect Powder.....	kegs 120 to 150 lbs
Juniper Berries.....	bags 120 to 180 lbs
Koussou.....	bales 200 to 250 lbs
Kremnitz White.....	cases 110 to 120 lbs
Laurel Berries.....	bales about 200 lbs
Leaves, Absynth.....	bales 120 to 200 lbs
“ Aconite.....	bales 100 to 200 lbs
“ Belladonna.....	bales 100 to 200 lbs
“ Buchu, long.....	bales about 400 lbs
“ “ short.....	bales 300 to 400 lbs
“ Coca.....	bags about 70 lbs
“ Conium.....	bales 100 to 250 lbs
“ Damiana.....	bags 50 to 100 lbs
“ Digitalis.....	bales 100 to 300 lbs
“ Farfarae.....	bales 100 to 250 lbs
“ Horehound.....	bales 120 to 300 lbs
“ Hyosciamus.....	bales 100 to 300 lbs
“ Jaborandi.....	bales 100 to 250 lbs
“ Laurel.....	bales 300 to 400 lbs
“ Marjoram.....	bales 100 to 200 lbs
“ Matico.....	bags 50 to 100 lbs
“ Sage, Italian.....	bales 300 to 400 lbs
“ Senna, Alexandria.....	bales 300 to 400 lbs
“ “ picked.....	cases 200 to 250 lbs
“ “ East India.....	bales 120 to 300 lbs
“ “ Tinnevely.....	bales 250 to 280 lbs
“ Stramonium.....	bales 100 to 300 lbs
“ Summer Savory.....	bales 150 to 300 lbs
“ Thyme.....	bales 150 to 300 lbs
“ Uva Ursi.....	bales about 250 lbs
Lac Dye.....	chests 4 cwt
Lemon Peel.....	bales 200 to 250 lbs
Licorice, Calabria (inv. tare & 10 lbs for leaves, loss 5 to 15 lbs).....	cases about 200 lbs
“ Mass (inv. tare).....	cases 250 to 400 lbs
Lead, red, dry (imported).....	kegs 1 to 5 cwt
Litharge (imported).....	kegs about 100 lbs
Lycopodium.....	cases and bbls. 150 to 250 lbs

Mace	cases about 60 lbs
Madder, Dutch	casks 1,000 to 1,500 lbs
Magnesia	cases 14, 28 and 56 lbs and 1 cwt
Carbonate	cases 1 cwt
Cilciued	bottles 1 lb
Manna, small flake (iuv. tare)	cases 120 to 150 lbs
large " "	cases 60 to 120 lbs
sorts	cases 150 to 200 lbs
Methylated Spirits	casks 30 to 140 galls
Morphine (imported)	cases 50 ozs
Moss, Iceland	bales 150 to 400 lbs
Irish	bbls. 75 to 100 lbs
Musk	caddies about 21 ozs
Naphtha, Coal Tar	bbls. 40 galls
Wood	tins 12 galls
Neatsfoot Oil, South American	4-gallon tins, 2 in a case
Nutmegs	boxes 80 to 100 lbs., and casks 200 lbs
Nutgalls, Aleppo	bales about 200 lbs
Nux Vomica	pockets about 40 lbs
Olive Oil	chests 60 flasks
Orange Peel, sweet	bales about 300 lbs
bitter	bales about 200 lbs
Orris Root, Florentine	casks 900 to 1,200 lbs
Verona	casks 1,000 to 1,400 lbs
Oil, Anise	16 $\frac{2}{3}$ -lb lead cans, 4 in a case
Almonds, sweet	cans 10 to 40 lbs
Bay	bottles about 22 ozs
Bergamot	copper cans 20 and 40 lbs
Cajeput	1 $\frac{1}{2}$ -lb bottles 36 in a case
Caraway, Chaff	cans 10 and 30 lbs
Seed	cans 10 and 30 lbs
Castor, East India	cans about 5 galls., 4 in a case
Cassia	16 $\frac{2}{3}$ -lb lead cans, 4 in a case
Cinnamon	bottles 16 to 22 ozs
Cinnamon, true	bottles about 22 ozs
Citronella	1 $\frac{1}{2}$ -lb bottles 36 in a case
Cloves	bottles and cans from 5 to 25 lbs
Cocoanut, Ceylon (tare 15%)	casks about 2,000 lbs
Cochin (tare 18%)	bbls. and casks 450 to 1,100 lbs
Cuba (inv. tare)	bbls. 330 to 400 lbs
Croton, English	bottles 24-oz. 24 and 36 in a case
Cubebs	bottles 24-ozs
Geranium	1-lb bottles, 5-lb cans
Juniper Wood	cans about 16 and 30 lbs
Laurel	bbls. 250 to 300 lbs
Lavender, garden	cans about 16 and 30 lbs
flowers	cans about 5 and 10 lbs
Lemon	copper cans 20 and 40 lbs
Lemongrass	bottles about 22 ozs
Myrbane	cans 20 to 50 lbs

Oil, Neroli.....	cans 4, 8 and 16 ozs
“ Nutmegs.....	bottles about 22 ozs., 56 in a case
“ Olive, Malaga.....	bbls. 40 and 60 galls
“ “ sublimed.....	jars about 6 and 12 galls, and bbls. 40 galls
“ “ Virgin.....	stone crocks about 5 galls
“ Orange.....	cans 20 and 40 lbs
“ Origanum.....	cans 20 and 25 lbs
“ Palm (tare 18% on bbl. under 500 lbs., 15% over 500 lbs.)	bbls., csk 350 to 3,500 lbs
“ Peppermint, Hotchkiss.....	cases 18 bottles of 21 ozs
“ “ Hale and P.....	cases 18 bottles of 24 ozs
“ Rose.....	cans 16 to 50 ozs
“ Rosemary leaves.....	cans or tins about 30 lbs
“ “ flowers.....	cans 5 and 10 lbs
“ Sandal wood.....	bottles about 24 ozs
“ Sassafras.....	cans 40 to 50 lbs
“ Savin, French.....	cans about 25 lbs
“ Sesame, genuine.....	bbls. about 40 galls
“ Verbena.....	bottles 24 in a case
“ Wintergreen.....	cans 20 to 25 lbs
Ocher, Havre and Rochelle.....	casks from 600 to 800 lbs
Opium, East India.....	cases 149½ lbs
“ Turkey.....	cases 120 to 160 lbs
Orange-flower Water.....	cans about 3 and 6 galls
Orange Apples.....	bales 200 to 350 lbs
“ Peel.....	bags 70 to 100 lbs., mats 300 to 350 lbs
Paris Green.....	drums, 14, 28 and 56 lbs
Persian Berries.....	bags 1 cwt
Phosphorus.....	tins 10 lbs., 10 in a case
Pimento.....	bags about 125 lbs
Pepper, Black.....	bags about 125 lbs
“ Red.....	mats about 125 lbs
“ White.....	bags 1½ cwt
Plumbago.....	chests 11½ cwt
Poppy Heads.....	casks 100 to 200 lbs
Pumicestone, lump, English.....	casks about 50 lbs
Potash, Bichromate.....	casks 600 to 900 lbs
“ Prussiate.....	casks about 500 lbs
“ Iodide.....	cases 50 1-lb bottles
“ Chlorate, English.....	kegs 112 lbs
“ “ French.....	cases about 125 lbs
“ Carbonate.....	casks 5 cwt
Quassia, chipped.....	bbls. about 125 lbs
Quicksilver.....	iron flasks 76½ lbs. and 25 lbs
Rosin.....	bbls. 3 cwt. and about 2 cwt
Rottenstone, English.....	120-lb. bbls., 600-lb casks
Root, Aconite.....	bales 100 to 200 lbs
“ Alkanet.....	bales 250 to 350 lbs
“ Althæa.....	bales and casks 200 to 300 lbs
“ Calamus.....	bales 200 to 300 lbs
“ “ (bleached).....	cases and bbls. 100 to 200 lbs

Root, Colchicum.....	bales and casks 100 to 200 lbs
“ Colombo.....	bales 100 to 140 lbs
“ Dandelion.....	bales and casks 100 to 300 lbs
“ Galangal.....	bales 100 to 150 lbs
“ Gentian.....	bales 150 to 300 lbs
“ Hellebore.....	bales about 200 lbs
“ Ipecac.....	ceroons about 100 lbs
“ Jalap.....	bales 200 to 250 lbs
“ Licorice.....	bales 80 to 250 lbs
“ Pareira Brava.....	bales about 200 lbs
“ Rhatany.....	ceroons about 100 lbs
“ Rhubarb.....	cases 65 to 200 lbs
“ Sarsaparilla, Honduras.....	bales 100 to 160 lbs
“ “ Mexican.....	bales 250 to 350 lbs
“ Senega.....	bags 25 to 300 lbs
“ Serpentaria.....	bags 100 to 500 lbs
“ Squills.....	bags 130 to 200 lbs
“ Turmeric.....	bags about 130 lbs
Rose Pink (inv. weight).....	bbls. and casks 300 to 600 lbs
Saffron, Spanish.....	tins 28 lbs
Sage.....	bales about 250 lbs
Sago.....	bags about 120 lbs
Salt peter, East India.....	bags 1½ cwt
“ refined.....	bbls. 1 cwt
“ granulated.....	cases 2 cwt
Soda, Ash.....	casks about 1,000 lbs
“ Bi carbonate.....	kegs 112 lbs
“ Caustic.....	drums about 600 lbs
“ Crystals.....	casks 3 cwt
“ Hyposulphite.....	kegs 1 cwt
“ Nitrate.....	bags 2 cwt. and about 350 lbs
“ Sal.....	casks 3, 4 and 6 cwt
“ Tartarated.....	casks 5 cwt
Sulphur, Flowers.....	bbls. 1½ cwt
“ Roll.....	bbls. 3 cwt
Sumac, Sicily.....	bags about 160 lbs
Sugar of Lead.....	300-lb bbls., from 600 to 800 lb casks
Spermaceti.....	boxes about 35 lbs
Seeds, Anise, German and Russian.....	bales 100 to 200 lbs
“ “ Italian.....	bales about 220 lbs
“ “ Spanish.....	bales 100 to 200 lbs
“ “ Star.....	cases 66 to 130 lbs
“ Canary, Sicily.....	bags 200 lbs
“ “ Smyrna.....	bags 240 lbs
“ Caraway.....	bags about 125 lbs
“ Cardamom, Aleppo.....	cases about 200 lbs
“ “ Madras.....	cases 150 to 200 lbs
“ “ Malabar.....	cases 150 to 250 lbs
“ Celery.....	bags about 100 lbs
“ Colchicum.....	bags and bbls. 100 to 200 lbs

Seeds, Coriander.....	bales 100 to 200 lbs
“ Cummin.....	bales 100 to 250 lbs
“ Fennel.....	bales 100 to 200 lbs
“ Flax, rough (56 lbs. to a bush.).....	bags and bbls. 3 to 4 bush
“ Flax, whole.....	bbls. about 3½ bushels
“ “ ground.....	bbls. about 150 lbs
“ Fœnugreek.....	bales 100 to 250 lbs
“ Hemp (no tare).....	bags 220 lbs
“ Millet (48 lbs. to a bush.).....	bags about 100 lbs
“ Mustard, California white and brown (no tare).....	bags about 100 lbs
“ “ English (no tare).....	bags about 200 lbs
“ “ Dutch, German and Russian.....	bags 100 to 200 lbs
“ “ Trieste.....	bbls. about 250 lbs
“ Rape, American.....	bags 100 to 150 lbs
“ “ English.....	bags 220 lbs
“ “ German.....	bags 150 to 400 lbs
Shellac.....	chests 1 to 3 cwt
Smalts.....	bbls. 3 cwt
Soap.....	chests 3¼ cwt
Soft Soap.....	barrels 4 firkins (256 lbs)
Sponges, Florida and Nassau, S. W.....	bales 50, 75 and 100 lbs
“ Mediterranean, bath.....	cases 33 and 66 lbs
“ “ surgeon and toilet.....	cases 25 lbs
Sugar Candy.....	boxes about 70 lbs
St. John's Bread.....	bales about 125 lbs
Sugar Milk.....	boxes about 100 lbs
“	casks from 200 to 400 lbs
Sugar of Lead, brown.....	casks 1,000 to 1,200 lbs
“ “ white.....	casks 600 to 800 lbs
Tamarinds.....	kegs about 50 lbs
Tapioca.....	bags and bbls. about 150 lbs
Tar, Archangel.....	bbls. 3 cwt
Tonka Beans.....	200-lb bbls., from 400 to 600 lb casks
Turpentine.....	bbls. 2 to 2½ and 3 cwt
Ultramarine.....	boxes 28 lbs., 12 in a case
Umber.....	bbls. about 258 lbs
Uva Ursi Leaves.....	bales about 150 lbs
Valerian Root, German.....	bales about 125 lbs
“ English.....	bales about 125 lbs
Vanilla Beans.....	cans about 25 lbs., 4 in a case
Venetian Red.....	bbls. about 350 lbs
Venice Turpentine (tare 10%),.....	stands about 125 lbs
“ (actual tare).....	bbls. about 350 lbs
“ (actual tare).....	cases of 2 cans, 45 lbs. each
Vermilion, English.....	bags 30 and 50 lbs
“ American.....	6-lb. boxes, 72-lb. cases
“ Trieste.....	bags 31 lbs., 2 in a keg
“ Chinese.....	cases 66⅔ lbs
Vitriol, blue.....	bbls. about 100 lbs
Whiting.....	bbls. about 350 lbs
Zinc Oxide, dry, French.....	bbls. 220 lbs
“ American.....	bbls. 200 lbs
Zinc Sulphate.....	kegs 1 cwt., and casks 6 cwt

IMPORTS OF THE PAST THREE CALENDAR YEARS.

COMPARATIVE STATEMENT OF DRUGS, OILS, CHEMICALS, ETC., RECEIVED
AT THE PORT OF NEW YORK DURING 1879, 1880 AND 1881.

IN the following table the quantities are in packages, unless otherwise stated :

	1879.		1880.		1881.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Anatto.....	3,185	\$27,658	2,505	\$27,833	3,115	\$44,993
Asphaltum.....	.....	65,017	8,545	82,509	.....	96,157
Asafetida.....	252	6,494	503	11,766	309	7,115
Acetate lime.....	701	1,695	4,453	7,043	1,383	3,844
Arsenic.....	6,830	51,163	6,350	50,700	8,312	75,298
Acids.....	6,294	334,072	9,362	457,785	9,083	336,499
Aniline arsenate.....	509	28,209	780	49,401	1,671	62,138
Aniline colors.....	4,723	690,070	6,851	1,010,450	8,192	1,145,421
Aniline crude.....	.....	.....	.....	.....	5	783
Aniline salts.....	416	26,429	400	28,005	454	33,290
Anise seed.....	883	14,729	1,511	26,871	1,380	21,690
Arnica flowers.....	204	2,725	457	6,467	434	5,355
Ammonia, carbonate.....	843	64,704	780	59,525	504	37,921
Ammonia, crude.....	.....	.....	.....	.....	227	1,270
Ammonia, muriate.....	388	26,352	478	31,802	467	32,416
Ammonia, sal.....	463	56,350	450	49,462	359	42,613
Ammonia, sulphate.....	.....	.....	18	503	.....	.....
Arrowroot.....	1,631	8,881	508	7,505	457	7,305
Argols.....	15,864	1,839,536	14,080	2,067,390	14,333	2,259,756
Aloes.....	2,099	24,102	1,406	19,091	19,997	28,195
Alum.....	2,105	17,111	1,318	13,060	2,264	18,046
Aurine.....	21	2,944	28	1,600	12	798
Alum cake.....	2,048	17,354	1,021	6,042	351	1,962
Albumen.....	2,220	222,534	1,061	132,090	1,260	91,723
Albumen, blood.....	607	79,624	274	28,171	33	2,158
Albumen of egg.....	105	11,012	60	2,275	214	19,258
Aluminium.....	.....	.....	.....	.....	1	1,757
Alizarin.....	3,194	496,999	3,666	630,630	3,528	513,555
Ambergris.....	.....	.....	.....	.....	2	1,411
Archil weed.....	732	23,375	833	19,203	58	3,974
Archil liquor.....	1,571	136,418	1,297	95,971	1,539	117,436
Ale.....	13,238	137,583	18,347	184,910	22,674	209,605
Balsam Copaiba.....	669	37,138	875	38,667	1,469	79,025
Bitumen.....	.....	.....	244	2,430	.....	.....
Bark, Peruvian.....	50,473	1,709,211	31,921	1,040,296	31,880	1,138,306
Barytes.....	1,136	6,297	4,695	24,960	3,177	15,789
Barytes, carb.....	232	2,725	1,098	6,956	588	12,731
Barytes, sulph.....	182	1,320	2,446	20,501	50	304
Bleaching powders.....	24,875	298,709	29,344	379,240	20,109	224,760
Brimstone.....	.....	919,735	.....	1,250,915	.....	1,636,273
Borax.....	875	19,607	50	1,665	40	1,349
Buchu leaves.....	145	5,393	82	3,124	185	10,123
Burgundy pitch.....	1,282	4,226	500	1,409	.....	7,743
Butter, cocoa.....	1	44	16	1,783	24	1,680
Bottles.....	.....	102,328	.....	221,637	.....	290,190
Brandy.....	48,084	937,694	55,242	1,098,700	50,618	1,055,333
Bitters.....	4,582	28,074	5,472	35,984	12,250	72,925
Beer.....	28,036	241,030	39,909	296,103	46,101	312,354
Brazil wood.....	.....	98,784	.....	178,359	.....	111,476
Barwood.....	.....	7,179	.....	16,225	.....	1,950
Clay.....	.....	89,852	.....	129,558	.....	128,960
Corks.....	.....	70,401	.....	120,335	.....	96,870
Candles.....	.....	1,952	.....	1,537	.....	4,520
Carbon.....	.....	.....	.....	.....	.....	54,157
Charcoal.....	.....	.....	.....	.....	.....	108,492
Cocoa, bags.....	40,530	1,171,484	39,422	820,634	62,330	1,178,333
Cocoa shells, bags.....	1,300	1,416	1,817	2,037	4,725	5,026
Camwood.....	.....	42,858	.....	36,437	.....	27,544
Corkwood.....	.....	442,608	.....	580,701	.....	755,990
Cocobola.....	.....	17,770	.....	42,629	.....	14,100
Chemical salts.....	682	114,592	886	42,036	.....	15,655
Camphor.....	13,642	279,765	18,891	445,270	12,584	259,479
Carmin.....	10	1,823	84	5,987	33	5,402
Chalk.....	.....	27,211	.....	36,368	.....	32,099
Cardamoms.....	236	62,268	381	95,291	204	33,847
Chamomile flowers.....	539	13,537	454	10,029	485	10,433

	1879.		1880.		1881.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Calomel.....	71	\$2,721	47	\$1,572	92	\$3,078
Cantharides.....	100	8,714	95	5,518	103	10,995
Castor beans.....	7,393	20,226	67	332	168	857
Cochineal.....	4,609	448,441	4,039	414,980	5,483	402,030
Cream tartar.....	10	2,786	55	16,537	.....	.....
Chlo. of barium.....	24	374	207	2,774	.....	.....
Chlorokarium.....	5,048	17,105	10,863	37,861	.....	.....
Cobalt.....	56	13,630	64	10,585	75	4,849
Chloral hydrate.....	385	21,182	232	11,745	284	11,057
Chlorodyne.....	37	3,231	13	1,127	10	1,260
Colocynth.....	179	8,890	225	9,435	273	11,041
Colombo root.....	100	754	.....	.....	296	2,514
Cudbear.....	271	29,695	419	48,502	289	43,819
Cutch.....	45,841	274,422	95,323	739,488	74,063	507,564
Cutbbs.....	8,321	58,517	1,488	17,168	3,173	48,535
Cuttlefish bone.....	627	6,879	660	7,003	711	11,233
Crocus.....	.....	.....	58	832	.....	.....
Capsicum.....	.....	.....	.....	.....	150	1,578
Cudbear extract.....	.....	.....	.....	.....	4	1,217
Chemical instruments.....	31	1,671	17	1,017	61	3,516
Cordials.....	9,294	57,127	10,735	63,876	9,256	65,205
Cassia.....	.....	283,734	.....	226,986	.....	84,144
Cinnamon.....	.....	9,147	.....	4,373	.....	5,246
Cloves.....	.....	265,263	.....	322,003	.....	304,272
Calcined farina.....	30	2,025	.....	.....	.....	.....
Dextrine.....	999	12,002	879	11,928	1,180	10,452
Dragon's blood.....	6	315	32	1,212	812	6,278
Divi-divi.....	9,361	18,164	11,738	29,081	9,241	17,033
Dyewood, extract.....	7,200	213,439	10,217	303,330	7,934	246,835
Ergot.....	133	5,536	626	48,356	547	40,429
Epsom salts.....	60	340	30	156	60	260
Fuller's earth.....	5,304	5,261	3,637	3,547	4,467	4,550
Fish sounds.....	87	7,230	288	21,410	639	39,876
Fustic.....	.....	125,687	.....	84,996	.....	126,597
Gambier.....	56,987	484,418	95,492	787,990	59,607	499,686
Garancine.....	1,890	222,996	1,336	131,230	1,371	169,376
Gamboge.....	440	18,584	366	16,340	227	8,917
Gentian root.....	170	1,374	664	4,456	675	5,024
Glucose.....	17,703	143,489	12,186	101,327	9,529	98,198
Glycerine.....	4,523	192,380	5,631	274,469	7,959	753,306
Guinea grains.....	75	618	51	688	67	896
Gum arabic.....	6,023	337,094	7,444	408,351	7,914	306,614
Gum benjamin.....	80	5,398	107	6,948	27	1,688
Gum copal.....	.....	.....	17,887	654,860	15,309	354,559
Gum damar.....	.....	.....	4,128	115,276	3,797	92,732
Gum guaiacum.....	285	4,687	640	9,822	229	3,920
Gum kino.....	18	794	14	706	72	2,253
Gum kowie.....	17,092	393,681	23,824	685,854	32,100	755,882
Gum olibanum.....	294	4,870	359	7,166	233	3,616
Gum sandrac.....	125	5,900	74	4,825	87	6,363
Gum senegal.....	95	2,664	88	2,416	25	491
Gum substitute.....	654	20,317	21	16,717	118	7,988
Gum talca.....	312	12,710	365	12,690	37	963
Gum tolu.....	253	14,794	158	10,623	10	659
Gum tragacanth.....	1,843	151,761	1,184	115,235	1,005	86,049
Glue.....	2,732	158,259	6,483	307,947	5,435	288,187
Glass.....	277,502	495,769	684,941	1,409,033	491,880	910,214
Glass plate.....	5,436	734,073	7,332	957,724	9,145	963,684
Gin.....	18,041	129,195	20,619	167,404	22,936	178,799
Ginger.....	.....	145,155	.....	102,925	.....	72,291
Gum gedda.....	97	4,012	.....	.....	.....	.....
Gelatine.....	.....	83,683	.....	.....	.....	.....
Helebore root.....	.....	.....	110	1,258	.....	.....
Hops.....	994	129,547	2,989	140,738	2,087	190,259
Isinglass.....	433	46,411	1,084	57,589	537	57,724
Ipecac.....	311	30,281	563	56,972	250	48,169
Insect powder.....	1,205	57,101	1,397	66,271	2,235	155,398
Indigo.....	5,427	1,109,984	6,672	1,928,216	4,651	908,013
Indigo, extract of.....	1,162	70,189	1,205	75,084	1,593	101,043
Iodine.....	191	109,392	334	158,755	400	155,395
Iodine of pot.....	2	195	7	815	3	211
Jalap.....	287	10,811	200	7,695	283	9,017
Juniper berries.....	1,121	2,368	3,353	7,761	535	1,527
Lac dye.....	660	10,867	1,551	19,188	218	11,731
Lavender flowers.....	43	227	51	390	141	865
Laurel leaves.....	757	4,757	403	2,607	645	5,842
Leeches.....	238	4,017	265	4,664	289	5,082
Licorice paste.....	2,668	93,169	3,999	106,624	3,242	96,207
Licorice root.....	92,025	446,890	88,911	414,944	147,487	798,009
Locust beans.....	.....	.....	100	357	212	503
Lead, pigs.....	22,727	100,778	42,507	227,899	41,786	211,216

	1879.		1880.		1881.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Lima wood		\$15,612		\$4,360		\$9,642
Logwood, M lbs.	98,877	840,066	99,001	880,934	95,497	802,534
Linseed	404,054	2,137,772	436,094	2,063,550	174,427	748,675
Mace		34,337		45,207		12,659
Mustard		205,561		178,470		199,040
Myrabolanes	2,880	5,510	5,577	15,960	2	7
Manna	275	9,993	226	10,684	360	13,013
Magnesia	2,006	36,692	2,361	35,076	2,120	30,829
Morphine	17	9,008	51	34,152	36	27,164
Madder	2,431	180,311	1,080	95,452	751	65,985
Manganese	600	11,414	310	5,081	240	10,948
Manuring salt	4,968	36,471	7,199	81,727		355,045
Munjeet	72	690	126	1,788	54	608
Magnesium, chlor.					758	1,737
Mineral water	57,714	203,307				
Nitrate of benzole	95	1,755	25	429	25	475
Nitrate of lead			70	5,099	146	9,586
Nutgalls	2,845	57,805	2,713	63,049	1,918	65,601
Nux vomica	8,160	14,876	8,603	21,008	8,273	17,225
Nitro baryte					10	193
Nutmegs		519,588		497,619		417,366
Ocher	3,437	19,609	4,583	28,240	5,118	40,419
Orris root	268	6,920	394	8,733	350	11,937
Oxide of zinc	12,089	133,319	7,134	81,868	10,435	110,548
Oil, amber	10	357	26	1,020	22	734
Oil, aniline	282	39,345	109	29,710	102	20,997
Oil, almonds	274	12,381	183	12,524	235	13,407
Oil, anise seed	284	32,577	972	120,364	189	21,207
Oil, alizarine	50	1,131	95	2,421	60	2,047
Oil, bergamot	1,265	78,462	1,173	76,837	2,491	123,214
Oil, cake	284	474				175
Oil, cod	3,156	64,810	6,037	153,915	2,295	57,379
Oil, castor	1,676	24,150	526	6,499	460	4,315
Oil, caraway	52	6,666	31	3,889	92	7,648
Oil, cocoanut	4,791	258,828	7,568	363,898	6,182	218,967
Oil, cajeput	80	2,609	308	9,467	126	2,398
Oil, croton	76	2,568	31	1,701	44	2,358
Oil, cinnamon	7	833	7	41	50	2,930
Oil, citronella	1,340	40,930	1,699	78, 60	2,287	74,096
Oil, cloves	15	591	15	91	18	1,741
Oil, cassia	943	45,240	1,031	65,931	1,049	59,086
Oil, cotton seed					250	5,146
Oil, fish	2,015	40,031	2,162	52,861	851	23,846
Oil, geranium	21	3,567	13	2,518	17	3,835
Oil, Haarlem	166	3,257	237	5,386	187	3,911
Oil, juniper	33	1,915	19	1,300	34	1,917
Oil, linseed	45	3,553	2,446	106,070	43	2,173
Oil, lavender	507	37,396	372	36,675	512	57,310
Oil, laurel	10	149	3	42	7	89
Oil, lemon	2,487	116,826	3,171	145,077	3,802	184,608
Oil, myrbane	300	5,964	161	3,517	195	3,916
Oil, nutmeg	32	762			6	278
Oil, origanum	85	1,197			80	1,820
Oil, orange	253	8,712	301	13,083	297	12,709
Oil, olive	47,342	291,479	48,989	300,287	52,614	361,038
Oil, palm	511	35,172	799	45,481	669	33,853
Oil, rapeseed					142	3,924
Oil, rose	95	91,084	58	62,288	73	89,314
Oil, rosemary	41	1,589	220	7,316	274	9,208
Oil, sesame	612	21,786	908	37,389	1,549	58,851
Oil, sandalwood	37	6,572	24	3,870	38	6,457
Oil, sperm	146	19,847	605	96,248	224	22,292
Oil, tanners'	4,054	81,054	5,908	102,026	2,484	45,778
Oil, thyme	592	16,250	680	16,317	693	15,991
Oil, whale	323	39,158	548	51,855	676	75,277
Oil, essential	927	77,014	1,266	120,270	1,013	106,778
Oil, other	333	8,882	431	11,533	635	16,565
Opium	1,582	845,951	1,550	1,250,384	1,327	753,418
Orange peel	2,614	10,142	4,342	12,773	1,038	3,814
Optical instruments	326	92,498	363	102,557	314	102,263
Pepper		578,269		739,589		891,264
Pimento		104,418		122,843		168,525
Pitch	1,294	15,163	606	5,472		5,614
Paints		623,869		878,404		819,897
Potash, bichromate	4,363	322,264	5,885	418,850	1,501	118,445
Potash, bicarbonate	690	19,562	979	21,500	187	4,882
Potash, chlor.	6,493	99,834	3,459	66,822	5,141	84,944
Potash, crude.	6	286	44	1,931	248	9,125
Potash, caustic.	50	1,861	20	731	130	2,725
Potash, prussiate	147	23,686	539	72,399	1,427	178,931
Potash, muriate	42,080	128,180	67,773	218,248	79,701	271,765

	1879.		1880.		1881.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Potash, sulphate.....	2,484	\$13,918	496	\$4,186	1,616	\$5,205
Potash, salt.....	.....	.....	.....	.....	105	3,857
Persiau berries.....	.....	.....	25	3,406	.....	.....
Phosphorus.....	1,000	54,024	1,135	61,133	1,179	63,834
Porter.....	638	6,406	388	3,147	480	5,050
Plaster.....	.....	235,603	.....	356,490	.....	424,545
Perfumery.....	3,166	288,015	4,883	401,211	4,296	380,991
Quinine.....	587	249,910	1,345	744,479	1,026	1,031,127
Quicksilver.....	4,800	147,573	210	6,322	3,739	117,300
Regulus antimony.....	2,123	155,889	3,313	331,282	2,403	197,436
Rhubarb.....	587	27,942	932	44,557	661	32,346
Rochelle salts.....	.....	.....	27	1,476	.....	.....
Rum.....	3,503	82,503	4,083	3,648	83,618	71,752
Redwood.....	.....	9,658	.....	8,332	.....	7,463
Sapanwood.....	.....	4,607	.....	17,280	.....	5,459
Sarsaparilla.....	2,166	61,676	2,034	66,998	1,628	63,203
Santonine.....	1	262	6	948	1	212
Saffron.....	83	18,350	26	18,828	47	22,446
Smalts.....	29	3,919	108	4,662	117	2,372
Scammony.....	5	2,083	11	3,200	9	4,224
Salt peter.....	38,351	284,358	61,665	414,116	59,844	400,955
Safflower.....	4	2,434	300	26,554	133	4,502
Safflower, extract.....	129	11,529	79	8,418	122	11,157
Sage leaves.....	834	12,710	42	314	627	3,970
Salicine.....	20	5,762	11	3,878	6	982
Salt cake.....	1,371	17,905	459	4,451	1,409	15,276
Shellac.....	14,170	436,422	14,803	757,430	20,631	944,740
Senna.....	858	18,976	1,792	36,432	829	15,483
Squills.....	466	4,537	409	2,403	232	1,453
Soda, ash.....	81,072	1,825,450	96,766	2,345,461	74,158	1,535,320
Soda, arsenate.....	38	2,063	20	719	35	1,401
Soda, bicarbonate.....	15,915	38,467	11,003	29,867	8,199	24,912
Soda, caustic.....	44,980	648,269	43,274	635,894	47,180	656,588
Soda, hyposulphate.....	2,420	18,957	2,446	16,805	4,310	22,927
Soda, nitrate.....	108,671	711,345	149,973	1,231,264	188,139	1,328,521
Soda, sal.....	66,472	155,414	53,896	155,467	48,797	138,768
Soda, silicate.....	841	6,648	1,490	14,594	200	1,529
Soda, stannate.....	80	3,624	62	2,952	40	1,689
Soda, tartrate.....	.....	.....	27	1,474	.....	.....
Soda, salicylate.....	.....	.....	6	575	.....	.....
Sponges.....	3,732	115,265	7,054	226,438	8,141	247,248
Storax.....	15	761	9	617	7	492
Sugar of milk.....	705	18,590	140	17,999	215	24,202
Sumac.....	51,519	201,911	57,638	222,434	33,678	130,354
Sumac, extract.....	603	12,028	1,255	27,504	1,573	28,362
Salts, tartar.....	.....	.....	.....	.....	101	3,617
Surgical instruments.....	19	5,624	52	9,980	48	8,672
Seed, canary.....	.....	196,126	.....	179,289	.....	220,760
Seed, caraway.....	.....	20,978	.....	24,050	.....	32,845
Seed, castor.....	.....	.....	.....	.....	11,100	34,624
Seed, coriander.....	.....	12,777	.....	9,331	.....	15,071
Seed, cummin.....	.....	.....	.....	.....	.....	4,460
Seed, fennel.....	.....	4,686	.....	3,853	.....	2,665
Seed, hemp.....	.....	67,357	.....	16,307	.....	59,167
Seed, poppy.....	.....	7,143	.....	3,707	.....	16,529
Seed, rape.....	.....	10,883	.....	16,691	.....	24,665
Soap stock.....	.....	.....	.....	.....	727	14,527
Soap.....	88,803	253,839	63,602	190,828	63,864	222,726
Terra alba.....	5,140	43,867	.....	34,870	.....	22,965
Tonka beans.....	541	134,323	290	60,314	549	55,767
Turneric.....	19,413	44,789	13,903	36,724	6,857	19,372
Talc.....	6,809	16,144	4,020	6,634	6,183	11,007
Tin crystals.....	.....	.....	.....	.....	10	1,174
Ultramarine.....	2,473	104,275	3,062	134,267	2,987	131,796
Vanilla beans.....	375	317,970	371	237,953	504	363,432
Varnish.....	946	61,524	1,067	71,157	996	69,549
Valerian root.....	115	1,346	121	1,322	213	1,905
Venice turpentine.....	250	6,731	98	8,063	142	4,411
Vermilion.....	25	4,357	189	9,421	143	7,594
Verdigris.....	157	47,124	152	45,005	137	33,417
Wax.....	.....	8,367	.....	17,742	.....	15,992
Woad.....	55	\$1,979	.....	\$2,093	34	\$2,155
Whiting.....	501	2,199	1,311	5,736	1,092	4,915
Worm seed.....	798	20,002	1,034	25,949	955	17,472
Whisky.....	7,348	88,911	7,082	80,898	8,756	91,784
Wines.....	177,182	2,103,737	197,409	2,448,063	236,007	2,967,716
Xylonite.....	.....	44,782	3	1,310	28	12,388
Yellow berries.....	628	14,315	299	7,935	385	10,771
Zaffre.....	.....	.....	.....	.....	5	186
Zoedone.....	.....	.....	.....	.....	.....	3,581

Exports from New York in 1880 and 1881.

ARTICLES.	1880.		1881.	
	Quantity.	Value.	Quantity.	Value.
Acids.....pkgs.			8,978	\$42,970
Alcohol.....galls.	9,885,204	\$2,845,070	66,134,121	2,360,244
Bark.....pkgs.			21,974	257,687
Beeswax.....lbs.		440,622	97,643	20,854
Carbon.....				31,689
Dye Extracts.....		462,846		542,767
Flaxseed.....bush.			495,087	661,584
Glue.....				18,153
Glucose and Grape Sugar.....		474,559		345,804
Lime, Acetate of.....				98,423
Oil, Cake.....tons	134,918	4,312,088	185,042	4,260,887
Cottonseed.....galls.	1,540,308	694,437	304,665	133,260
Essential.....pkgs.		107,917	3,184	194,612
Fish.....galls.	353,544	107,899	725,177	240,493
Lard.....galls.	769,688	455,745	404,346	305,329
Linseed.....galls.	83,389	52,950	48,252	31,807
Lubricating.....galls.	5,780,359	954,453	3,470,524	898,886
Sperm.....galls.	381,977	417,731	288,383	294,892
Whale.....galls.			156,077	72,004
Paints.....		135,891		115,426
Paraffine Wax.....lbs.			6,156,032	396,373
Pitch.....bbls.			5,541	12,746
Rosin.....bbls.	207,254	597,108	179,303	695,326
Spermaceti.....cs.			7,344	80,816
Sponges.....pkgs.			1,026	40,871
Tallow.....tons			22,225	3,317,051
Tar.....bbls.	11,037	26,507	13,293	31,937
Turpentine.....galls.	1,546,639	598,931	515,131	269,772
Varnish.....galls.	48,360	103,472	98,208	180,842
Zinc, Oxide of.....		10,660		

Average Export Prices.

THE average export prices for the past seven fiscal years were as follows:

	Unit of Quantity.	FISCAL YEARS.						
		1875.	1876.	1877.	1878.	1879.	1880.	1881.
Acids.....	lb.	\$0.034	\$0.031	\$0.031	\$0.030	\$0.030	\$0.026	\$0.028
Ashes, pot and pearl....	lb.	.067	.057	.050	.056	.058	.090	.099
Ginseng.....	lb.	1.324	1.175	1.277	1.180	1.077	1.363	1.641
Glue.....	lb.	.173	.239	.197	.125	.111	.150	.152
Rosin and turpentine	bbl.	2.959	2.655	2.649	2.235	1.940	2.276	2.418
Tar and pitch.....	bbl.	2.317	2.381	2.222	2.154	1.938	3.055	2.435
Oil cake.....	lb.	.021	.020	.017	.015	.013	.014	.014
Oil—Crude mineral.....	gall.	.097	.108	.140	.100	.084	.068	.075
Naphtha, &c.....	gall.	.097	.097	.130	.086	.084	.065	.100
Illuminating.....	gall.	.141	.144	.211	.144	.109	.087	.107
Lubricating.....	gall.	.267	.315	.311	.277	.263	.201	.215
Residuum.....	bbl.	1.878	3.144	4.170	3.345	2.696	2.436	2.475
Lard.....	gall.	1.005	1.019	.811	.635	.529	.542	.821
Neatsfoot.....	gall.	1.031	1.082	.989	.880	.926	.774	.771
Sperm.....	gall.	1.725	1.530	1.386	1.108	.885	1.010	.985
Whale and fish.....	gall.	.461	.409	.431	.455	.339	.341	.349
Cotton seed.....	gall.	.519	.519	.494	.504	.417	.461	.425
Linseed.....	gall.	.948	.783	.730	.700	.733	.812	.660
Quicksilver.....	lb.	1.086	.642	.454	.482	.390	.456	.380
Soap, common.....	lb.	.067	.067	.062	.057	.051	.047	.048
Spermaceti.....	lb.	.258	.254	.267	.255	.241	.228	.197
Spirits turpentine.....	gall.	.344	.323	.335	.306	.270	.311	.356
Starch.....	lb.	.039	.054	.032	.047	.042	.043	.043
Tallow.....	lb.	.087	.093	.086	.078	.069	.069	.075
Varnish.....	gall.	1.382	1.498	1.514	1.530	1.575	2.112	1.832
Wax, Bees.....	lb.	.273	.316	.305	.291	.271	.253	.254

Values of Paints and Colors Imported;

WITH AVERAGE RATES OF DUTIES, AMOUNTS OF DUTY RECEIVED, AND
CONSUMPTION AND DUTY PER CAPITA OF POPULATION, FOR
FISCAL YEARS 1867 TO 1881, INCLUSIVE.

Fiscal Year.	Value.	Average Rate of Duty Per Cent.	Duty Collected.	Consumption Per Capita.	* Duty Per Capita.
1867.....	\$1,150,191	50.57	\$581,611	3.18 Cents.	1.61 Cents.
1868.....	1,132,788	45.01	509,866	3.08 "	1.39 "
1869.....	1,281,457	42.33	542,496	3.29 "	1.44 "
1870.....	1,135,173	42.77	481,225	2.92 "	1.25 "
1871.....	1,318,831	42.94	566,365	3.33 "	1.43 "
1872.....	1,434,100	43.60	625,267	3.53 "	1.54 "
1873.....	1,508,559	39.65	598,172	3.62 "	1.43 "
1874.....	1,121,890	39.26	441,642	2.62 "	1.03 "
1875.....	1,243,751	38.66	480,874	2.82 "	1.09 "
1876.....	1,018,624	36.82	375,021	2.24 "	0.83 "
1877.....	944,496	38.33	362,026	2.02 "	0.78 "
1878.....	864,733	37.49	325,229	1.80 "	0.67 "
1879.....	780,186	36.74	286,700	1.58 "	0.58 "
1880.....	1,065,964	35.89	382,601	2.13 "	0.76 "
1881.....	985,605	34.78	342,782	1.92 "	0.67 "

* In the compilation of duty per capita for each year, the population in other than census years is estimated. For instance, that of 1867 is placed at 36,211,000. and that of 1881 at 51,462,000.

New York's Export Trade.

THE Custom House returns show that the total exports from the port of New York for the calendar year ending December 31, 1881, amounted to \$385,760,201. The following table gives the exports from the port for the past eleven calendar years:

Year.	MERCHANDISE.		Specie and Bullion.	Total Exports.
	Domestic.	Foreign.		
1871.....	\$235,553,247	\$9,112,990	\$63,865,546	\$298,531,783
1872.....	225,475,687	11,383,610	71,959,042	308,818,339
1873.....	288,707,357	11,538,048	48,659,661	348,905,066
1874.....	274,208,898	9,738,235	61,222,228	345,162,361
1875.....	247,681,724	8,780,444	67,556,650	324,018,818
1876.....	265,774,202	9,776,662	43,097,102	318,648,066
1877.....	290,960,048	9,973,923	27,497,169	326,431,140
1878.....	340,206,868	9,207,432	13,107,788	362,522,082
1879.....	349,471,680	6,746,885	14,828,044	371,046,609
1880.....	406,955,884	8,866,943	9,370,272	425,193,099
1881.....	358,479,834	14,656,536	12,623,831	385,760,201
Total 11 years...	\$3,273,475,529	\$99,781,708	\$432,787,333	\$3,814,935,564

The Weight of Starches.

THE following table shows the weight of commercial starches per cubic foot in pounds and per cubic decimeter in grams.

	Per Cubic Foot, Pounds.	Per Cubic Decimeter, Grams.
Corn, as made.....	37.88	606.95
" pulverized.....	43.39	694.95
Potato, crystals.....	52.59	842.47
" pulverized.....	54.28	869.52
Rice, large crystals.....	34.22	548.19
Wheat, as made.....	42.83	686.10

REGISTRATION OF TRADE MARKS.

ON the 3d of March, 1881, Congress passed a law authorizing the registration of trade marks, and for the protection of the same, in place of the act of July 8th, 1870, which had been declared unconstitutional by the Supreme Court of the United States. Under this new law the Patent Office has adopted the following rules and forms for the registration of trade marks :

RULES AND FORMS ADOPTED BY THE UNITED STATES PATENT OFFICE FOR THE REGISTRATION OF TRADE MARKS UNDER THE ACT OF MARCH 3, 1881.

WHO MAY OBTAIN REGISTRATION.

1. (a.) Any person, firm, or corporation domiciled in the United States or located in any foreign country which, by treaty, convention, or law, affords similar privileges to citizens of the United States,* and who is entitled to the exclusive use of any trade mark and uses the same in commerce with foreign nations or with Indian tribes.

(b.) Any citizen or resident of this country wishing the protection of his trade mark in any foreign country the laws of which require registration in the United States as a condition precedent.

STATUTORY REQUIREMENTS.

2. Every applicant for registration of a trade mark must cause to be recorded in the Patent Office :

(a.) The name, domicile, and place of business or location of the firm or corporation desiring the protection of the trade mark, and the residence and citizenship of individual applicants.

(b.) The class of merchandise and the particular description of goods comprised in such class to which the trade mark has been appropriated.

(c.) A description of the trade mark itself, with facsimiles thereof, and the mode in which it has been applied and used.

(d.) The length of time during which the trade mark has been used by the applicant on the class of goods described.

3. A fee of twenty-five dollars is required on filing each application, except in the cases hereinafter named. (See par. 16 and 17.)

THE APPLICATION.

4. An application for the registration of a trade mark will consist of a statement and specification, a declaration on oath, and the facsimile, with duplicates thereof.

5. These should be preceded by a brief letter of advice requesting registration and signed by the applicant.

6. The statement should announce the full name, citizenship, domicile, residence, and place of business of the applicant (or, if the applicant be a corporation, under the laws of what State or nation incorporated), with a full and clear specification of the trade mark, particularly discriminating between its essential and non-essential features. It should also state from what time the trade mark has been used by the applicant, the class of merchandise, and the particular

* The following countries have treaties with the United States at this time, viz. : Russia, Belgium, France, Austria, the German Empire, and Great Britain.

goods comprised in such class to which the trade mark is appropriated, and the manner in which the trade mark has been applied to the goods.

7. The declaration should be in the form of an oath by the person, or by a member of the firm, or by an officer of the corporation, making the application, to the effect that the party has at the time of filing his application a right to the use of the trade mark described in the statement; that no other person, firm, or corporation has a right to such use, either in the identical form or in such near resemblance thereto as might be calculated to deceive; that such trade mark is used in lawful commerce with some foreign nation (or nations), or some Indian tribe (or tribes), and that it is truly represented in the facsimile presented for registry.

8. This oath may be taken within the United States, before a notary public, justice of the peace, or the judge or clerk of any court of record. In any foreign country it may be taken before the secretary of legation or consular officer of the United States, or before any person duly qualified by the laws of the country to administer oaths, whose official character shall be certified by a representative of the United States having an official seal.

FACSIMILES TO BE FILED.

9. Where the trade mark can be represented by a facsimile which conforms to the rules for drawings of mechanical patents,* such a drawing may be furnished by the applicant, and the additional copies will be produced by the photo-lithographic process at the expense of the Office. Or the applicant may furnish one facsimile of the trade mark, mounted on a card ten by fifteen inches in size and ten additional copies upon flexible paper, not mounted; but in all cases the sheet containing the mounted facsimile, or the drawing, must be signed by the applicant or his authorized attorney.

PROCEEDINGS IN THE OFFICE.

10. All applications for registration are considered in the first instance by the Trade-Mark Examiner. An adverse decision by such examiner upon the applicant's right to registration will be reviewed by the Commissioner in person upon petition without fee.

11. No trade mark will be registered unless it shall be made to appear that the same is used as such by the applicant in commerce with foreign nations or with Indian tribes, or is within the provisions of a treaty, convention, or declaration with a foreign power, nor which is merely the name of the applicant, nor which is identical with a known or registered trade mark owned by another and appropriated to the same class of merchandise, or which so nearly resembles some other person's lawful trade mark as to be likely to cause confusion in the mind of the public or to deceive purchasers.

12. In case of conflicting applications for registration, or in any dispute as to the right to use which may arise between an applicant and a prior registrant, the Office will declare an interference, in order that the parties may have an opportunity to prove priority of adoption or right; and the proceedings on such interference will follow, as nearly as possible, the practice in interference with applications for patents; but each applicant and registrant will be held to the date of adoption alleged in the statement filed with his application. On the petition of any party dissatisfied with the decision of the Examiner of Interferences the case will be reviewed by the Commissioner without fee.

* These rules are furnished on application by letter to the Commissioner.

13. When these requirements have been complied with, and the Office has adjudged the trade mark lawfully registrable, a certificate will be issued by the Commissioner, under seal of the Interior Department, to the effect that applicant has complied with the law, and that he is entitled to the protection of his trade mark in such cases made and provided. Attached to the certificate will be a facsimile of the trade mark and a printed copy of the statement and declaration.

14. The protection for such trade mark will remain in force for thirty years, and may, upon the payment of a second fee, be renewed for thirty years longer, except in cases where such trade mark is claimed for and applied to articles not manufactured in this country, and in which it receives protection under the laws of any foreign country, for a shorter period, in which case it will cease to have force in this country, by virtue of the registration, at the same time that the trade mark ceases to be exclusive property elsewhere.

15. The right to the use of any trade mark is assignable by an instrument of writing, and such assignment of a registered trade mark must be recorded in the Patent Office within sixty days after its execution, in default of which it shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice. No particular form of assignment or conveyance is prescribed, but the trade mark should be identified by the certificate number.

16. Owners of trade marks for which protection has been sought by registering them in the Patent Office under the act of July 8, 1870 (declared unconstitutional by the Supreme Court of the United States), may register the same for the same goods, without fee, on compliance with the foregoing requirements. With each application of this character, a specific reference to the date and number of the former certificate is required.

17. Applicants whose cases were filed under the act of 1870, either prior to or since the decision of the Supreme Court declaring it unconstitutional, which are now pending before the Office, are advised to prepare applications in conformity with the law and foregoing rules. On the receipt of such an application, referring to the date of the one formerly filed, all fees paid thereon will be duly applied. Those who have paid only \$10 as a first fee are advised that the law does not provide for a division of the legal fee of \$25, and that the remainder of the entire fee is required before the application can be entertained.

COPIES AND PUBLICATIONS.

18. Printed copies of the statement and declaration in each case, with a duplicate of the trade mark, can be furnished by the Office. The *Official Gazette* of the Patent Office, published weekly, will contain a list of all trade marks registered, with the name and address of the registrant, a brief statement of the essential features of the trade mark, and the particular description of goods to which it is applied.

FEES.

19. On filing an application for registration of trade mark.....	\$25 00
For recording assignments :	
Under 300 words.....	1 00
Over 300 and less than 1,000 words.....	2 00
Over 1,000 words.....	3 00
For single printed copy of statement and declaration.....	0 25
Single copy <i>Official Gazette</i>	0 10
Annual subscription <i>Official Gazette</i>	5 00

CORRESPONDENCE.

20. All letters should be addressed to "The Commissioner of Patents," and all remittances by postal order, check, or draft should be to his order.

21. Letters relating to pending applications should refer to the name of the applicant and date of filing. Letters relating to registered trade marks must refer to the name of registrant, number or date of certificate, and the class of merchandise to which the trade mark is applied.

22. The Office cannot undertake to respond to inquiries propounded with a view to ascertain whether certain trade marks have been registered, or, if so, to whom and for what goods; nor can it give advice as to the nature and extent of the protection afforded by the law, or act as its expounder, except as questions may arise upon applications regularly filed. A copy of these rules, with this paragraph marked, will be regarded as a courteous answer to all such inquiries.

FORMS.

The following forms have been prepared to be used in filing applications for registration of trade marks. Their use is not absolutely required, but as they have been made to conform to the conditions of the law, applicants will find their business facilitated by following them closely.

LETTER OF ADVICE.

To the Commissioner of Patents:

The undersigned presents herewith a facsimile of his lawful trade mark, and requests that the same, together with the accompanying statement and declaration, may be registered in the United States Patent Office in accordance with the law in such cases made and provided.

A. B.

STATEMENT.

To all whom it may concern :

Be it known that I, A. B.,* a citizen of the United States, residing at ———, in the county of ———, and State of ———, and doing business at ———, have adopted for my use a trade mark for ——— ———,* of which the following is a full, clear, and exact specification.

My trade mark consists of the letters and words (or arbitrary symbols, as the case may be) ——— ———. These have generally been arranged as shown in the accompanying facsimile. (Here give a full description of the facsimile, including all its features.) But ——— ——— may be omitted and the ——— ——— changed at pleasure without materially altering the character of my trade mark, the essential features of which are ——— ———.

This trade mark I have used continuously in my business since ———, 18—.

The class of merchandise to which this trade mark is appropriated is ——— ———, and the particular description of goods comprised in such class on which I use the said trade mark is ——— ———†. It has been my practice to (here state fully the manner of applying it to the goods or the packages containing them).

A. B.

Witnesses :

C. D.

E. F.

* The first paragraph of the statement should be modified to conform to the circumstances of each applicant. If a firm, the domicile and place of business are required; if a corporation, under what State or other laws incorporated, where located, and place of business; if a person not an American citizen, of what country he is a citizen (or subject, as the case may be), &c.

† The description of the goods on which the trade mark is used should be in the same language in the first and last paragraphs of the statement.

DECLARATION.

State of ———, County of ———, ss:

A. B., being duly sworn, deposes and says that he is the applicant named in the foregoing statement; that he verily believes that the foregoing statement is true; that he has at this time a right to the use of the trade mark therein described; that no other person, firm, or corporation has the right to such use, either in the identical form or in any such near resemblance thereto as might be calculated to deceive; that it is used in commerce with (here name one or more foreign nations or Indian tribes, or both, as the case may be); that the description and facsimiles presented for record truly represent the trade mark sought to be registered; and that he is a citizen of the United States.

Sworn and subscribed to before me, a ———, this ——— day of ———, 1881.

G. H., J. P.

If the application is made by a firm or corporation, or by a citizen or subject of a foreign power, this declaration should be modified accordingly.

Total Exports for the Fiscal Years 1880 and 1881.

THE exports of drugs, dyes, etc., from all ports for the fiscal years 1880 and 1881, ending June 30, were as follows :

ARTICLES.	Quantities.		Values.	
	1880.	1881.	1880.	1881.
Drugs, Chemicals, and Medicines*.....			\$2,756,469	\$3,045,338
Acids.....lbs.	2,242,747	1,304,964	71,231	39,240
Pot and Pearl Ash.....lbs.	1,231,528	1,636,839	110,578	141,463
Lamp, Bone and Ivory Black.....lbs.	1,249,958	1,591,651	66,069	51,682
Dyestuffs.....			702,754	626,749
Ginseng.....lbs.	391,083	338,841	533,042	561,545
Glue.....lbs.	150,718	367,069	23,650	59,038
Lime and Cement.....bbls.	41,989	57,555	52,584	83,598
* Manure—Salts, &c., (excl. of Guano).....			587,777	581,960
Rosin and Turpentine.....bbls.	1,040,345	1,023,710	2,368,180	2,529,423
Spirits of Turpentine.....galls.	7,091,200	6,595,528	2,132,154	2,414,719
Tar and Pitch.....bbls.	41,221	46,682	84,728	109,394
Oils—Mineral, Crude.....galls.	28,297,997	39,984,844	1,927,207	3,065,464
“ refined, naphthas, benzine.....galls.	18,411,044	17,292,310	1,192,329	1,693,975
Illuminating.....galls.	367,325,823	332,282,945	31,783,575	34,317,682
Lubricating.....galls.	5,162,835	4,852,203	1,039,124	1,054,064
Residuum.....bbls.	113,500	77,730	276,490	184,411
Lard.....galls.	1,507,596	842,531	816,447	562,028
Neatsfoot and other animal.....galls.	30,383	77,496	23,519	60,359
Sperm.....galls.	482,153	314,568	487,004	303,113
Whale and Fish.....galls.	1,022,888	591,536	349,109	226,274
Cottonseed.....galls.	6,967,796	3,190,836	3,225,414	1,465,255
Linseed.....galls.	38,431	72,190	31,214	48,479
Volatile and Essential.....			219,612	92,738
Oil Cake.....lbs.	453,023,225	448,553,413	6,259,827	6,284,364
Paints and Painters' Colors.....			231,774	287,338
Perfumery.....			302,993	292,939
Quicksilver.....lbs.	3,574,412	2,955,948	1,360,176	1,124,955
Soap—Toilet.....			38,567	44,496
Spermaceti.....lbs.	197,847	214,205	45,018	40,945
Varnish.....galls.	45,383	87,408	96,062	156,617
Wax (bees').....lbs.	193,217	164,090	48,880	40,203

* Not elsewhere specified.

NEW FRENCH TARIFF FOR DRUGS, OILS, ETC.

BESIDES our direct exports to France, of nearly three millions of dollars' worth of mineral, animal and vegetable oils, and our large shipments of alcohol, we also have a large indirect trade which will be affected more or less by the new tariff. The new scale of duties, as far as it affects oils, drugs, chemicals, dyes and colors, is presented below, together with a comparison with the old tariff. Discriminating duties, also, are levied on certain products of European origin imported from other countries than that of their production; and there are also duties on European products imported direct from the country of their production. In many cases the comparison cannot be definite on account of the variations in the specification and classification of some articles:

[Duties in francs and centimes.]

	Per 100 kilos.	
	New Tariff.	Old Tariff.
Aloes	6.00	6.00 to 12.00
Arsenious acid.....	Exempt.	1.20
Acetates of copper, crude.....	10.00	
Acetates of copper, refined powder.....	14.50	
Acetates of copper, refined crystals.....	21.00	
Acetates of iron, liquid.....	Exempt.	
Acetates of iron, concentrated.....	10.00	15.00 to 84.00
Acetates of lead (sugar of lead).....	5.00	
Acetates of potash.....	22.00	
Acetates of soda, anhydrous.....	5.00	
Acetates of soda, crystallized or hydrate.....	4.75	
Alcohol, amylic.....	6.25	
Alcohol, mythylene.....	9.25	
Aluminate of soda*.....	13.50	Prohibited.
Alum of ammoniac, or potash and sulphate of alumine.....	1.50	
Ammoniaque (volatile alkali).....	3.00	
Arseniate of potash.....	8.75	84.00
Arseniate of soda.....	4.25	Prohibited.
Archil paste.....	5.00	120.00
Archil, dry (cudbear violet).....	10.00	240.00
Artificial madder.....	5% a. v.	
Alcohol and brandy in bottles, per liquid hectoliter.....	30.00	30.00
Alcohols and brandy not in bottles.....	30.00	30.00
Alcohols, other.....	30.00	30.00
All products composed partly or mostly of alcohol shall be subject, exclusively to the custom dues bearing upon them, to the internal revenue dues on alcohol in use; said dues shall be decided by the consulting committee of arts and manufactures.....		30.00 to 35.00
All chemical products not otherwise mentioned, including extracts of quinine, and phosphoric paste.....	\$ 5% a. v.	Prohibited.
Balsams.....	10.00	1.00 to 9.60
Beeswax, raw, yellow, brown or white.....	10.00	1.00 to 3.00
Beeswax, waste of.....	Exempt.	1.00
Benzoic acid.....	124.00	3.00
Boracic acid.....	Exempt.	0.30
Borax, crude, native or artificial.....	8.75	5.00 to 5.50
Borax, half refined or refined.....	10.00	70.00
Bromine and bromide of potassium.....	100.00	48.00
Carbonate of magnesia.....	6.25	240.00
Carbonate of lead.....	2.00	Exempt.
Citrate of lime.....	7.50	1.20
Chlorate of potash,* soda and others.....	32.00	Prohibited.
Chloride of aluminium.....	200.00	Prohibited.
Chloride, double, of aluminium and sodium.....	18.50	Prohibited.
Chloride of lime*.....	4.50	Prohibited.
Chloride of magnesia*.....	0.50	Prohibited.
Chromate of potash.....	10.00	180.00
Chromate of lead.....	16.00	90.00
Calcined magnesia.....	18.50	Prohibited.

[illegible]

Perfumery, alcoholic, 1 per hectoliter of pure alcohol.....	37.50	15.00
“ Not alcoholic.....	12.00	
Phosphorus, white.....	50.00 }	Prohibited.
Phosphorus, red.....	149.00 }	
Prussian blue.....	12.00	Exempt.
Prepared spices : Mustard.....	5.00 }	30.00 to 240.00
“ Sauces, &c.....	25.00 }	
Sponges, raw.....	35.00	50.00 to 55.00
Sponges, prepared, fine.....	65.00	
Starch.....	6.00	
Sealing-wax.....	30.00	120.00
Salt of beet root.....	*0.13	0.10 to 0.15
Soda of varach (kelp).....	*0.19	31.80
Soda, caustic.....	*8.00	Prohibited.
Soda, carbonate of*.....	2.30 }	
Soda, crude, 30° or more.....	7.25 }	31.80 to 22.80
Soda, crude, less than 30°.....	5.00 }	
Soda, refined soda salt, 60° or more.....	17.50 }	
Soda, refined soda salt, less than 60°.....	2.30 }	
Soda crystals, less than 60°.....	2.30	3.00
Soda, natron.....	5.20 }	Prohibited.
Soda, bicarbonate of.....	4.35 }	
Soda salts not mentioned.....	8.00 }	60.00 to 120.00
Sal ammonia, crude.....	12.00 }	
Sal ammonia, refined*.....	7.75	
Sulphate ammonia, refined.....	3.00	
Salts, other, crude.....	7.75	
Salts, other, refined.....	980.00	Prohibited.
Salts of silver.....	10.00	Prohibited.
Salts of tin.....	5.00	24.00
Spermaceti.....	10.00	20.00
Spermaceti, pressed.....	15.00	50.00
Spermaceti, refined.....	6.00	Prohibited.
Soap, common.....	4.25 }	
Silicate of soda, anhydrous.....	3.75 }	Prohibited.
Silicate of soda, crystallized.....	2.10 }	
Silicate of soda, hydrate.....	3.00	37.20
Sulphate of copper.....	0.65	7.20
Sulphate of iron.....	0.50	22.20
Sulphate, double, of iron and copper.....	Exempt.	84.00
Sulphate of magnesia.....	2.20 }	7.20
Sulphate of soda,* pure, anhydrous, or containing 25% of salt or less.....	9.00 }	1.80
Sulphate of soda,* pure, anhydrous, or containing more than 25% of salt.....	1.20 }	1.75
Sulphate of soda,* pure, crystallized or hydrate (Glauber's salts).....	8.25 }	1.30
Sulphate of soda, impure, anhydrous, containing over 25% of salt.....	2.20 }	1.25
Sulphate of soda, impure, anhydrous, containing 25% of salt or less.....	1.10 }	8.25
Sulphate of soda, impure, crystallized or hydrate (Glauber's salts).....	1.40 }	7.20
Sulphate of zinc.....	2.20 }	6.60
Sulphate of soda*.....	1.10 }	1.75
Sulphurett of arsenic.....	1.40 }	37.20
Sulphurett of mercury (cinnabar).....	2.20	Prohibited.
Sulphurett of mercury, artificial (in stones).....	\$ 5% a. v.	9.60
Sulphurett of mercury, pulverized (vermillion).....	Exempt.	180.00
Stearic acid.....	31.00	240.00
Sulphuric acid.....	62.00	
Tartaric acid.....	10.00	5% a. v.
Talc, pulverized.....	0.25	49.20
Tartrate of potash, including double tartrate of potash and soda.....	Exempt.	84.00
Ultramarine.....	20.00	300.00
Varnishes, alcohol.....	30.00 }	
Varnishes, essence.....	20.00 }	49.20 to 98.40
Varnishes, oil or essence or oil mixed.....	40.00 }	
Water colors in paste for paper hangings.....	7.50	Not specified.
Wax and stearic acid not in candles.....	19.00	4.00
Woods, perfumed.....	Exempt.	
Woods, dye, in logs.....	Exempt.	3.00 to 4.80
Woods, dye, ground.....	Exempt.	

* Including the cost of superintendence of the manufacture of soda.

‡ Including the tax of cost for soda-salts in the manufacture of ultramarine.

§ With privilege to transfer to specific duty.

¶ Specific duties to be decided by the high school of pharmacy, rating at 10 per cent. ad valorem, exclusive of the duties which may be fixed on medicaments composed of dutiable substances, either by the custom house or internal revenue.

VALUE OF FOREIGN COINS.

THE value of foreign coins in the money of the United States has been declared as follows, for 1882, by the Secretary of the Treasury:

Country.	Monetary Unit.	Standard.	Value in U.S. Money.
Austria	Florin	Silver	40·6
Belgium	Franc	Gold and silver	19·3
Bolivia	Boliviano	Silver	82·3
Brazil	Milreis of 1000 reis	Gold	54·6
British Poss. in N. A.	Dollar	Gold	\$1.00·0
Chili	Peso	Gold and silver	91·2
Cuba	Peso	Gold and silver	93·2
Denmark	Crown	Gold	26·8
Ecuador	Peso	Silver	82·3
Egypt	Piaster	Gold	04·9
France	Franc	Gold and silver	19·3
Great Britain	Pound sterling	Gold	4.86·6 $\frac{1}{2}$
Greece	Drachma	Gold and silver	19·8
German Empire	Mark	Gold	23·8
Hayti	Gourde	Gold and silver	96·5
India	Rupee of 16 annas	Silver	39·0
Italy	Lira	Gold and silver	19·3
Japan	Yen	Silver	88·7
Liberia	Dollar	Gold	1.00·0
Mexico	Dollar	Silver	89·4
Netherlands	Florin	Gold and silver	40·2
Norway	Crown	Gold	26·8
Peru	Sol	Silver	82·3
Portugal	Milreis of 1000 reis	Gold	1.08·0
Russia	Rouble of 100 copecks	Silver	65·8
Sandwich Islands	Dollar	Gold	1.00·0
Spain	Peseta of 100 centimes	Gold and silver	19·3
Sweden	Crown	Gold	26·8
Switzerland	Franc	Gold and silver	19·3
Tripoli	Mahbub of 20 piasters	Silver	74·3
Turkey	Piaster	Gold	04·4
U. S. of Colombia	Peso	Silver	82·3
Venezuela	Bolivar	Gold and silver	19·3

To Gauge Casks.

THE contents of casks may be found by the following method, which gives the gauge easily and correctly:—Add into one sum 39 times the square of the bung diameter, 25 times the square of the head diameter, and 26 times the product of both these diameters. Multiply the total by the length of the cask, and that product by ·0000314 for the contents in gallons.

Example.—Required, the contents of a cask ; length, 40 inches ; bung diameter 32 inches ; head diameter, 24 inches.

$$\begin{array}{rcl}
 & \text{Diameter} & \text{Times} \\
 \text{Bung} & 32 \times 32 \times 39 = & 39936 \\
 \text{Head} & 24 \times 24 \times 25 = & 14400 \\
 \text{Product} & 32 \times 24 \times 26 = & 19968
 \end{array}$$

$$\begin{array}{rcl}
 74304 & \text{the sum} \\
 40 & \text{the length}
 \end{array}$$

$$·0000314 \times 2972160 = 93·3$$

Answer, 93 $\frac{3}{10}$ gallons, the contents.

Deutsche Drogen Handlung.

Drogueria Española.

LEHN & FINK,

IMPORTERS, EXPORTERS AND JOBBERS OF

Drugs, Chemicals AND Essential Oils.

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New Remedies,

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P. O. Box 3114.

NEW YORK.

LAZELL'S PERFUMES.

PRICE LIST.

ATTRACTIVE IN STYLE. UNRIVALED IN QUALITY.

Put up in flint glass stoppered bottles, pints and half pints, containing 16 and 8 fluid ounces, respectively, bottles and stamps inclusive.

PRICES.

Musk, \$5.00 per pint; Roman Frangipanni, \$7.00 per pint; Violette de Parme, \$6.00 per pint.
Archery Club Bouquet.....\$4 00 per pint. | Jacque-Minot Rose.....\$4 00 per pint.
Knights Templar Bouquet.....4 00 | Light Guard Bouquet.....4 00

The following Odors and Bouquets \$3.00 per pint :

Acacia,	Honeysuckle,	Night Blooming Cereus,	Sweet Lotus,
Azalea,	Hyacinth,	Ocean Spray,	Sweet Pea,
Bouquet Anglais,	Jasmin,	One Thousand Flowers,	Tea Rose,
" Caroline,	Jockey Club,	Orange Blossom,	Tuberose,
" Victoria,	Jonquille,	Patchouly,	Upper Ten,
" Waverly,	Lily of the Valley,	Persian Bouquet,	Verbena,
Bridal Bouquet,	Magnolia,	Pond Lily,	Violet,
Bicycle Club Bouquet,	Marechale,	Redwood Bouquet,	West End,
Carnation Pink,	Mignonette,	Rondeletia,	White Lilac,
Clove Pink,	Millefleur,	Rose,	White Rose,
Ess. Bouquet,	Moss Rose,	Rose Geranium,	Wood Violet,
Frangipanni,	Mousseline,	Spring Flowers,	Ylang Ylang.
Heliotrope,	Musk Rose,	Stephanotis,	
	New Mown Hay,	Sweet Brier,	

In beautiful etched-labeled bottles, with cut and polished stoppers; pint and half-pint sizes, 25 cents extra.

Sold by Wholesale Druggists and Fancy Goods Dealers throughout the United States.

LAZELL, MARSH & GARDINER, Sole Proprietors,
NEW YORK.

MONTHLY DRUG PAPERS ARE OBSOLETE.

Drop them and take the **WEEKLY DRUG NEWS** Formerly The Oil and Drug News.

SPECIMEN OPINIONS ON THIS JOURNAL:

BOSTON, October 20, 1881.

MESSES. ROOT & TINKER.

Gentlemen: I have been a subscriber to the OIL AND DRUG NEWS since its commencement, and am pleased to say that I consider the journal a valuable addition to our pharmaceutical literature. *Its Prices Current are noticeably good.* Yours truly,

S. A. D. SHEPPARD, Dispensing Pharmacist.

61 WARREN ST., BOSTON, Nov. 1, 1881.

MESSES. ROOT & TINKER.

Gentlemen: I am well pleased with the character of the OIL AND DRUG NEWS. Its full and excellent WEEKLY *Prices Current* are alone worth much more than the price of the journal. In a word I regard the publication as a very useful addition to our trade and pharmaceutical literature. Truly yours,

GEO. F. H. MARKOE.

BOSTON, Nov. 28, 1881.

JOSHUA M. CUSHING, Esq., authorized representative of the OIL AND DRUG NEWS.

Dear Sir: To say that your paper is *invaluable* does not convey the *high estimate* in which we hold it. The full and complete WEEKLY *Prices Current*, with the notable changes of market is worth during the year, *many times the amount of subscription.* The miscellaneous matter is well selected, and full of useful information to every pharmacist. May the OIL AND DRUG NEWS prosper. Yours truly,

A. LITTLEFIELD & Co., Apothecaries.

BOSTON, Nov. 4, 1881.

MESSES. ROOT & TINKER.

Gentlemen: The OIL AND DRUG NEWS contains each week articles of interest and importance to any Pharmacist, and the latest market reports and science items are arranged in such a manner that they can readily be found and consulted. The drug and chemical quotations are reliable, and the "Pharmaceutical Miscellany" is made up of valuable formulas and descriptions of new and rare drugs and chemicals, that are constantly claiming the attention of physicians and druggists.

Respectfully yours,

JOSEPH T. BROWN & Co., Pharmacists.

OROVILLE, BUTTE CO., CAL., Nov. 17, 1881.

MESSES. ROOT & TINKER.

Gentlemen: I consider your paper THE BEST I have ever taken, and by following its suggestions in regard to prices, etc., have been able to make some very good purchases, and thereby saving considerable.

Yours respectfully, D. F. FRYER.

BOSTON, May 11, 1882.

J. M. CUSHING, N. E. Agent, OIL AND DRUG NEWS.

Allow me to thank you for inducing me to subscribe to the OIL AND DRUG NEWS. I

thought I did not need it, and find it a constant source of information. It meets my needs in its varied knowledge on subjects pertaining to my business, and also as an outlook into modes of business life and interests of which I had no previous knowledge.

Very truly yours, W. A. CHAPIN.

YORK, PA., Jan. 19, 1882.

MESSES. ROOT & TINKER.

Gentlemen: Herewith find inclosed cash for subscription to OIL AND DRUG NEWS for ensuing year. We must thank you for publishing such an admirable journal, the "Pharmaceutical Miscellany" alone being worth the price of subscription. The WEEKLY report of the Drug Market is all that could be desired. No journal coming to our store is more thoroughly welcome, or more carefully read, than the OIL AND DRUG NEWS. Very respectfully,

JOHN F. PATTON & Co.

BOSTON, April 5, 1882.

JOSHUA M. CUSHING, Esq.

Dear Sir: The OIL AND DRUG NEWS is a most desirable Journal, giving WEEKLY reports of the Drug Market, and stating it more fully than any other trade journal. It also tells the imports and exporters, which is valuable to one who wishes to deal with "first hands." Yours respectfully,

EDWARD S. KELLY, Pharmacist.

LOWELL, MASS., April 15, 1882.

JOSHUA M. CUSHING, Esq.

Dear Sir: Among the numerous publications that I have received during the past twenty-five years, I think the OIL AND DRUG NEWS the best thing published for the use of Druggists and Pharmacists, as I consider the WEEKLY quotations and market reports more reliable than any others which I have received.

Very truly yours,

W. W. DUNCAN, Druggist.

LAWRENCE, MASS., April 19, 1882.

JOSHUA M. CUSHING, Esq., authorized representative of the OIL AND DRUG NEWS.

Dear Sir: We find the OIL AND DRUG NEWS the most satisfactory publication of the kind we have ever taken, and unhesitatingly commend it to all who require or enjoy condensed, reliable, instructive and interesting information upon all subjects properly within the limits of what its name indicates. Respectfully yours,

H. M. WHITNEY & Co., Pharmacists.

HAVERHILL, MASS., April 25, 1882.

MESSES. ROOT & TINKER.

Gentlemen: Your WEEKLY OIL AND DRUG NEWS, I am pleased to say, is just the buyer's guide I need, and is worth dollars more than it costs, for reference, and for Practical Receipts and useful instruction to every Druggist and Apothecary it is invaluable. Yours truly,

JAMES HOWE, Apothecary.

ROOT & TINKER, Proprietors,

102 Nassau Street, New York.

PRICE OF OPIUM IN SMYRNA.

THE following table gives the highest and lowest prices paid for Opium, in Smyrna, in each month for the past thirty-two years. The quotations are per pound, in gold, f. o. b. :

1850.	Highest.	Lowest.	1855.	Highest.	Lowest.	1861.	Highest.	Lowest.
January.....	\$2.33½	\$2.26½	September....	2.33½	2.26½	April.....	3.53	3.43
February.....	2.33½	2.26½	October.....	2.36½	2.28½	May.....	3.65½	3.58
March.....	2.48½	2.36½	November.....	2.56	2.38½	June.....	3.48	3.28
April.....	2.58½	2.48½	December.....	2.68½	2.58½	July.....	3.25½	3.05
May.....	2.56½	2.01½	1856.			August.....	3.00½	2.90
June.....	2.06½	1.96½	January.....	\$2.58½	\$2.53½	September.....	2.95½	2.9½
July.....	2.13½	2.08½	February.....	2.51	2.46½	October.....	2.95½	2.9½
August.....	2.16½	2.11½	March.....	2.48½	2.41½	November.....	2.90½	2.76
September.....	2.31½	2.08½	April.....	2.61	2.51	December.....	2.88½	2.87½
October.....	2.36½	2.23½	May.....	2.68½	2.63½	1862.		
November.....	2.33½	2.28½	June.....	2.93½	2.73½	January.....	\$3.88½	\$2.83½
December.....	2.48½	2.26½	July.....	3.20½	2.98½	February.....	2.83½	2.78½
1851.			August.....	3.20½	3.23½	March.....	2.76	2.68½
January.....	\$2.28½	\$2.26½	September.....	3.30½	3.13½	April.....	2.76	2.68½
February.....	2.23½	2.11½	October.....	3.18½	3.10½	May.....	3.03½	2.89½
March.....	2.09	2.07½	November.....	3.10½	3.05½	June.....	3.25½	3.15½
April.....	1.96½	1.91½	December.....	3.10½	3.05½	July.....	3.80½	3.35½
May.....	2.16½	1.91½	1857.			August.....	3.90½	3.77½
June.....	2.28½	2.21½	January.....	\$3.10½	\$3.00½	September.....	3.73	3.50½
July.....	2.31½	2.26½	February.....	3.03½	2.93½	October.....	3.63	3.53
August.....	2.26½	2.31½	March.....	2.88½	2.76	November.....	3.85	3.65½
September.....	2.23½	2.21½	April.....	2.73½	2.63½	December.....	3.87½	3.85½
October.....	2.23½	2.18½	May.....	2.73½	2.66	1863.		
November.....	2.23½	2.16½	June.....	2.66	2.38½	January.....	\$3.87½	\$3.82½
December.....	2.28½	2.26½	July.....	2.53½	2.41½	February.....	3.90½	3.80½
1852.			August.....	2.68½	2.56	March.....	3.85½	3.82½
January.....	\$2.46½	\$2.28½	September.....	3.45½	2.86	April.....	3.82½	3.77½
February.....	2.46½	2.41½	October.....	3.45½	3.23½	May.....	3.73	3.58
March.....	2.43½	2.36½	November.....	3.25½	2.98½	June.....	3.58	3.43
April.....	2.41½	2.36½	December.....	3.05½	2.95½	July.....	3.48	3.40½
May.....	2.28½	2.18½	1858.			August.....	3.73	3.53
June.....	2.11½	2.06½	January.....	\$3.13½	\$3.03½	September.....	3.68	3.60½
July.....	2.43½	2.11½	February.....	3.15½	3.10½	October.....	3.65½	3.58
August.....	2.36½	2.06½	March.....	3.05½	3.05½	November.....	3.60½	3.53
September.....	2.09	2.02½	April.....	3.20½	3.13½	December.....	3.63	3.55½
October.....	2.11½	2.01½	May.....	3.35½	3.23½	1864.		
November.....	2.11½	2.06½	June.....	3.25½	3.15½	January.....	\$3.68	\$3.58
December.....	2.16½	2.11½	July.....	3.35½	3.23½	February.....	3.82½	3.75½
1853.			August.....	3.60½	3.40½	March.....	3.85½	3.85½
January.....	\$2.16½	\$2.09	September.....	3.90½	3.73	April.....	4.77½	3.73
February.....	2.24½	2.16½	October.....	3.87½	3.75½	May.....	3.75½	3.70½
March.....	2.21½	2.13½	November.....	3.82½	3.73	June.....	3.70½	3.53
April.....	2.21½	2.11½	December.....	3.92½	3.80½	July.....	3.53	3.48
May.....	2.21½	2.16½	1859.			August.....	3.53	3.40½
June.....	2.21½	2.16½	January.....	\$4.15½	\$3.95½	September.....	3.38	3.23½
July.....	2.21½	2.13½	February.....	4.25½	4.20½	October.....	3.18½	2.98½
August.....	2.26½	2.23½	March.....	4.27½	4.22½	November.....	3.23½	3.13½
September.....	2.26½	2.23½	April.....	4.22½	3.92½	December.....	3.10½	3.03½
October.....	2.26½	2.21½	May.....	3.73	3.08½	1865.		
November.....	2.23½	2.18½	June.....	3.45½	3.18½	January.....	\$3.08½	\$3.03½
December.....	2.23½	2.16½	July.....	3.40½	3.20½	February.....	3.13½	3.08½
1854.			August.....	3.38	3.28½	March.....	3.05½	2.95½
January.....	\$2.26½	\$2.16½	September.....	3.53	3.43	April.....	2.90½	2.71
February.....	2.26½	2.23½	October.....	3.48	3.38	May.....	2.76	2.71
March.....	2.28½	2.23½	November.....	3.70½	3.50½	June.....	2.76	2.66
April.....	2.28½	2.23½	December.....	3.75½	3.68	July.....	2.61	2.31½
May.....	2.38½	2.26½	1860.			August.....	2.58½	2.43½
June.....	2.46½	2.46½	January.....	\$3.85½	\$3.77½	September.....	2.58½	2.53½
July.....	2.66	2.46½	February.....	4.12½	3.92½	October.....	2.63½	2.58½
August.....	2.63½	2.56	March.....	4.27½	4.17½	November.....	2.73½	2.66
September.....	2.88½	2.68½	April.....	4.55	4.27½	December.....	2.81	2.73½
October.....	3.13½	2.98½	May.....	3.97½	3.48	1866.		
November.....	3.30½	3.10½	June.....	3.43	3.28½	January.....	\$2.86	\$2.81
December.....	3.35½	3.23½	July.....	3.65½	3.38	February.....	2.93½	2.81
1855.			August.....	3.53	3.45½	March.....	3.38	3.10½
January.....	\$3.45½	\$3.45½	September.....	3.53	3.48	April.....	3.30½	3.18½
February.....	3.40½	3.23½	October.....	3.50½	3.48	May.....	3.10½	2.98½
March.....	3.20½	2.90½	November.....	3.53	3.48	June.....	3.25½	3.08½
April.....	2.98½	2.90½	December.....	3.53	3.45½	July.....	3.40½	3.28½
May.....	3.00½	2.95½	1861.			August.....	3.82½	3.50½
June.....	2.76	2.24½	January.....	\$3.45½	\$3.40½	September.....	3.73	3.63
July.....	2.31½	2.26½	February.....	3.38	3.33½	October.....	3.65½	3.63
August.....	2.31½	2.26½	March.....	3.38	3.33½	November.....	3.60½	3.58
						December.....	3.53	3.48

1867.	Highest.	Lowest.	1872.	Highest.	Lowest.	1877.	Highest.	Lowest.
January.....	\$3.58	\$3.48	January.....	\$3.48	\$3.38	January.....	\$4.22½	\$3.95½
February.....	3.58	3.48	February.....	3.60½	3.45½	February.....	4.22½	3.87½
March.....	3.48	3.25½	March.....	4.05½	3.97½	March.....	4.10½	3.82½
April.....	3.20½	3.08½	April.....	3.97½	3.85½	April.....	5.52	4.97½
May.....	3.15½	2.93½	May.....	3.82½	3.65½	May.....	4.22½	3.87½
June.....	2.98½	2.93½	June.....	4.22½	3.60½	June.....	4.00½	3.98
July.....	3.60½	2.98½	July.....	4.84½	4.47½	July.....	3.97½	3.10½
August.....	3.35½	3.23½	August.....	4.72½	4.47½	August.....	3.53	2.98½
September.....	3.23½	3.13½	September.....	4.97½	4.22½	September.....	4.25½	3.95½
October.....	3.20½	3.18½	October.....	5.59½	4.97½	October.....	3.97½	3.73
November.....	3.18½	3.15½	November.....	5.84½	5.47	November.....	4.02½	3.70½
December.....	3.45½	3.13½	December.....	5.59½	5.22	December.....	3.97½	3.60½
1868.			1873.			1878.		
January.....	\$4.02½	\$3.97½	January.....	\$5.59½	\$5.27	January.....	\$3.10½	\$2.73½
February.....	3.97½	3.73	February.....	4.95½	4.35	February.....	2.98½	2.73½
March.....	4.05½	3.85½	March.....	4.72½	4.22½	March.....	3.03½	2.78½
April.....	4.22½	3.87½	April.....	4.72½	4.32½	April.....	3.73	3.48
May.....	4.10½	3.60½	May.....	4.60	4.35	May.....	3.10½	2.73½
June.....	3.73	3.65½	June.....	5.34½	5.22	June.....	3.48	2.73½
July.....	3.87½	3.60½	July.....	5.64½	5.39½	July.....	2.98½	2.73½
August.....	4.67½	4.47½	August.....	5.47	5.09½	August.....	3.10½	2.73½
September.....	5.10½	4.84½	September.....	5.34½	5.22	September.....	2.98½	2.71
October.....	4.99½	4.84½	October.....	5.72	5.34½	October.....	3.15½	2.78½
November.....	6.84½	5.10½	November.....	5.59½	4.97½	November.....	3.48	2.73½
December.....	8.83½	6.96	December.....	5.09½	4.60	December.....	3.18½	2.73½
1869.			1874.			1879.		
January.....	\$9.69½	\$8.80½	January.....	\$4.10½	\$4.02½	January.....	\$3.03½	\$2.78½
February.....	9.44½	9.01	February.....	4.05½	4.00½	February.....	2.98½	2.68½
March.....	9.03½	8.76	March.....	4.35	4.25½	March.....	3.05½	2.81
April.....	7.36	7.31	April.....	5.34½	5.22	April.....	2.98½	2.73½
May.....	7.45½	7.01	May.....	6.26½	5.97½	May.....	3.35½	2.86
June.....	6.83½	6.31	June.....	6.46½	5.97½	June.....	3.40	2.73½
July.....	6.31	6.01½	July.....	6.58½	6.21½	July.....	3.18½	2.98½
August.....	7.21	5.09½	August.....	5.94½	5.52	August.....	3.35½	2.73½
September.....	5.02	4.72½	September.....	5.72	5.52	September.....	3.85½	2.98½
October.....	5.92	4.72½	October.....	5.94	5.47	October.....	4.00½	3.35½
November.....	6.71½	5.57	November.....	6.26½	5.97½	November.....	3.95½	3.18½
December.....	6.71½	6.34	December.....	5.59½	5.47	December.....	3.97½	3.05½
1870.			1875.			1880.		
January.....	\$6.46½	\$6.04½	January.....	\$5.59½	\$5.22	January.....	\$3.92½	\$3.00½
February.....	6.26½	5.96½	February.....	4.97½	4.47½	February.....	3.92½	3.00½
March.....	7.08½	6.46½	March.....	5.47	4.84½	March.....	4.84½	4.67½
April.....	7.08½	6.89½	April.....	4.84½	4.47½	April.....	5.59½	5.22
May.....	7.08½	6.71½	May.....	4.35	3.73	May.....	5.47	4.60
June.....	6.58½	6.34	June.....	3.53	3.43	June.....	5.47	4.60
July.....	6.08½	5.22	July.....	4.25½	4.20½	July.....	4.88½	4.47½
August.....	5.72	4.60	August.....	4.35	4.20½	August.....	5.47	4.62½
September.....	5.77	5.72	September.....	3.92½	3.73	September.....	4.84½	4.50
October.....	5.72	5.09½	October.....	4.35	4.22½	October.....	4.97½	4.54
November.....	5.34½	5.27	November.....	4.37½	4.22½	November.....	4.99½	4.35
December.....	5.22	4.97½	December.....	4.22½	4.00½	December.....	4.47½	3.85½
1871.			1876.			1881.		
January.....	\$5.34½	\$4.97½	January.....	\$3.35½	\$2.98½	January.....	\$4.47½	\$3.95½
February.....	5.52	5.02½	February.....	3.23½	2.93½	February.....	5.22	4.35
March.....	4.35½	4.05½	March.....	3.48	2.13½	March.....	4.47½	3.35½
April.....	4.02½	3.23½	April.....	3.23½	2.93½	April.....	3.74	3.35½
May.....	3.73	3.30½	May.....	3.15½	2.86	May.....	3.73	3.29½
June.....	3.97½	3.60½	June.....	4.00½	3.88	June.....	3.48	3.10½
July.....	3.97½	3.35½	July.....	4.22½	3.95½	July.....	3.15½	2.73½
August.....	3.73	3.28½	August.....	4.10½	3.97½	August.....	3.12½	2.82½
September.....	3.65½	3.40½	September.....	4.12½	3.87½	September.....	3.56½	3.16½
October.....	3.60½	3.40½	October.....	4.27½	3.95½	October.....	3.31½	3.14½
November.....	3.48	3.43	November.....	4.47½	4.22½	November.....	3.31½	3.25
December.....	3.48	3.28½	December.....	4.52½	4.10½	December.....	3.27½	3.25

Crops of Turkey Opium.

In connection with the other statistics of Turkey opium, the following table, giving the crop for each year since 1868, will prove of interest:

Year.	Cases, Year.	Cases, Year.	Cases, Year.	Cases.
1869.....	1,934 1873.....	1,580 1876.....	3,360 1879.....	4,500
1870.....	3,627 1874.....	3,200 1877.....	9,000 1880.....	2,100
1871.....	4,000 1875.....	2,500 1878.....	6,000 1881.....	11,500
1872.....	7,815			
Average crop for 13 years.....				4,932 cases.

PRICE OF QUININE.

The following figures are the highest and lowest prices per ounce for American quinine, in each year, from 1823 to 1881—59 years :

Year.	Highest.	Lowest.	Year.	Highest.	Lowest.	Year.	Highest.	Lowest.
1823.....	\$20.00	\$16 00	1843.....	\$1.80	\$1.55	1863.....	\$3.25	\$2.70
1824.....	14.00	12.00	1844.....	3.00	2.00	1864.....	3.75	2.60
1825.....	8.00	8.00	1845.....	2.40	2.35	1865.....	3.40	2.20
1826.....	7.00	5.25	1846.....	2.40	2.20	1866.....	2.60	2.25
1827.....	7.50	6.00	1847.....	2.40	2.30	1867.....	2.20	1.95
1828.....	6.00	3.25	1848.....	2.70	2.60	1868.....	2.35	1.95
1829.....	2.90	2.25	1849.....	3.65	2.95	1869.....	2.30	2.00
1830.....	2.50	1.75	1850.....	3.70	3.70	1870.....	2.30	2.10
1831.....	1.50	1.35	1851.....	3.25	3.25	1871.....	2.45	2.20
1832.....	2.00	1.75	1852.....	3.00	2.80	1872.....	2.45	2.40
1833.....	1.87	1.70	1853.....	3.20	2.70	1873.....	2.55	2.45
1834.....	1.80	1.25	1854.....	2.50	2.50	1874.....	2.50	2.20
1835.....	1.65	1.60	1855.....	3.00	2.60	1875.....	2.30	2.15
1836.....	1.58	1.45	1856.....	2.60	2.40	1876.....	2.70	2.20
1837.....	1.40	1.40	1857.....	2.00	1.40	1877.....	4.25	2.70
1838.....	1.90	1.60	1858.....	1.40	1.25	1878.....	3.60	3.40
1839.....	3.30	2.75	1859.....	1.50	1.25	1879.....	3.60	2.60
1840.....	3.12	2.87	1860.....	1.80	1.20	1880.....	3.25	2.25
1841.....	2.62	2.50	1861.....	2.10	1.80	1881.....	3.25	1.90
1842.....	2.00	1.60	1862.....	2.90	2.25			

Price of Opium in New York.

The following table gives the average monthly price of opium, in bond in New York, for the past fourteen years :

	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.
Jan....	\$4 50	\$12 00	\$7 00	\$5 75	\$3 85	\$5 80	\$5 00	\$6 25	\$3 00	\$4 90	\$3 60	\$3 45	\$4 00	\$4 90
Feb....	4 75	11 25	7 75	5 60	4 50	5 25	4 85	5 75	3 80	4 75	3 40	3 35	4 10	5 40
March..	4 60	10 50	8 25	4 50	4 65	5 00	5 50	6 25	4 00	4 50	3 45	3 45	5 75	5 00
April... 4 45	9 80	7 75	4 25	4 50	5 00	6 90	5 75	3 80	6 00	3 85	3 40	6 20	4 00	
May....	4 30	9 00	7 65	4 30	4 00	5 25	7 40	4 75	3 70	4 65	3 40	6 65	6 00	4 00
June... 4 60	8 25	8 00	4 25	4 70	6 00	7 80	3 50	4 25	4 25	3 50	3 55	5 75	4 00	
July... 4 90	7 50	7 50	4 40	5 40	6 25	7 20	4 00	4 90	4 00	3 40	3 75	5 70	8 34	
August 5 50	8 00	6 75	4 15	5 25	6 00	7 10	4 15	5 15	3 75	3 60	6 65	6 00	3 12½	
Sept....	6 00	5 75	6 50	3 90	5 30	6 10	7 00	3 95	4 75	3 90	3 40	3 80	5 80	3 10
Oct.... 6 15	6 35	6 00	4 00	6 00	6 00	7 20	4 25	5 00	3 80	3 45	4 20	5 55	3 08	
Nov.... 8 00	7 50	6 00	3 80	5 70	5 90	7 50	4 25	5 40	3 85	3 50	4 10	5 50	3 00	
Dec.... 11 00	7 00	6 25	3 80	5 80	5 25	7 00	4 15	5 25	3 65	3 60	4 00	5 25	3 10	
Year..	\$5 73	\$8 58	\$7 11	\$4 40	\$4 97	\$5 65	\$6 71	\$4 75	\$4 49	\$4 34	\$3 51	\$3 70	\$5 47	\$3 84

Dispensing Solutions.

The following solutions were originally recommended by Mr. George Sloan, of Indianapolis, for dispensing purposes:

Article.	Solvent.	Strength.
Chloral hydrate.....	Water.....	3 j. in f. 3 j.
Corrosive sublimate.....	Alcohol.....	gr. j. in f. 3 j.
Chloride zinc.....	Water.....	gr. ij. in f. 3 j.
Atropia sulph.....	Water.....	gr. j. in f. 3 j.
Duboisin.....	Water.....	gr. j. in f. 3 j.
Eserin sulph.....	Water.....	gr. j. in f. 3 j.
Strychnia sulph.....	Alcohol, 1 part, Water, 3 parts.	gr. j. in f. 3 j.
Calcium bromide.....	Water.....	3 j. in f. 3 j.
Zinc bromide.....	Water.....	3 j. in f. 3 j.
Lithium bromide.....	Water.....	3 j. in f. 3 j.
Potassium acetate.....	Water.....	3 j. in f. 3 j.
Potassium iodide.....	Water.....	3 j. in f. 3 j.
Potassium bromide.....	Water.....	3 j. in f. 3 j.

AVERAGE PRICE OF SPERM OIL.

The following table gives the average price of bleached winter sperm oil for each month from 1863 to 1881, inclusive:

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1863.....			2.17	2.12	2.10	2.05	1.87½	1.80	1.80	1.95	2.00	1.95	1.98
1864.....	1.90	1.90	1.85	1.85	1.90	2.10	2.50	2.50	2.52	2.40	2.40	2.40	2.19
1865.....	2.50	2.60	2.55	2.40	2.30	2.30	2.20	2.30	2.50	2.55	2.60	2.65	2.45
1866.....	2.70	2.70	2.65	2.55	2.55	2.85	2.90	3.00	3.00	3.00	3.00	3.00	2.83
1867.....	3.00	3.02	3.00	2.90	2.80	2.70	2.60	2.40	2.30	2.40	2.40	2.40	2.66
1868.....	2.30	2.30	2.25	2.25	2.25	2.20	2.15	2.10	2.05	2.15	2.25	2.10	2.20
1869.....	2.00	2.15	2.15	2.00	2.05	2.00	2.00	2.00	2.00	2.00	1.90	1.90	2.01
1870.....	1.80	1.70	1.70	1.75	1.70	1.65	1.60	1.55	1.55	1.50	1.45	1.45	1.62
1871.....	1.45	1.50	1.55	1.55	1.50	1.50	1.50	1.50	1.45	1.45	1.45	1.45	1.51
1872.....	1.75	1.75	1.80	1.85	1.85	1.80	1.72	1.70	1.60	1.60	1.70	1.77	1.74
1873.....	1.77	1.77	1.77	1.77	1.77	1.77	1.72	1.72	1.80	1.80	1.80	1.80	1.74
1874.....	1.80	1.80	1.85	1.90	1.85	1.90	1.90	1.90	1.95	1.95	1.95	2.00	1.90
1875.....	2.00	2.00	2.10	2.15	2.15	2.05	1.95	1.85	1.85	1.85	1.85	1.80	1.97
1876.....	1.90	1.90	1.90	1.80	1.70	1.65	1.60	1.60	1.60	1.60	1.65	1.70	1.72
1877.....	1.70	1.70	1.65	1.60	1.50	1.45	1.45	1.45	1.40	1.35	1.32	1.28	1.49
1878.....	1.26	1.24	1.20	1.16	1.10	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.10
1879.....	1.00	1.05	1.05	1.00	1.00	1.00	.95	.95	.95	.95	1.00	1.10	1.00
1880.....	1.15	1.20	1.20	1.20	1.20	1.17	1.10	1.10	1.10	1.17	1.17	1.17	1.16
1881.....	1.17	1.16	1.12	1.03	.99	.97	.97	.99	1.03	1.11	1.13	1.15	1.07

AVERAGE PRICE OF LARD OIL.

In the following table is given the average price of extra winter lard oil for each month from 1862 to 1881, inclusive—twenty years:

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1862.....						.70	.70½	.73½	.74	.84	.90	.90	.79
1863.....	.90	.95	1.12	1.00		.90		.90	.90	1.10	1.11		.99
1864.....	1.18	1.18	1.18	1.21	1.22	1.22	1.59	1.75	1.94	1.93	1.95	2.07	1.53½
1865.....		2.20	2.16	1.90	1.66	1.65	1.79	2.02	2.15	2.42	2.40	2.12	2.04
1866.....	2.00	1.90	1.77		1.84	1.92	1.90	1.80	1.74	1.64	1.50	1.29	1.75
1867.....	1.19	1.21	1.17	1.16	1.15	1.11	1.07	1.07	1.11	1.17	1.17	1.22	1.15
1868.....	1.23	1.21	1.37	1.42	1.55	1.45	1.42	1.42	1.47	1.57	1.42	1.49	1.41
1869.....	1.72	1.77	1.65	1.58	1.51	1.47	1.45	1.45	1.45	1.43	1.45	1.64	1.55
1870.....	1.52		1.32	1.27	1.30	1.20	1.22	1.22	1.22	1.22	1.23	1.17	1.27
1871.....	1.15	1.15		1.05	.97	.85	.82	.80	.75	.89	.80	.82	.90
1872.....	.82		.82	.79	.75	.75	.75	.72	.72	.74	.72	.72	.76
1873.....	.72	.70	.70	.70	.70	.69	.67	.67	.67	.67	.67	.67	.63
1874.....	.76	.87	.81		.83	.85	.92	1.02	1.04	1.05	1.05	1.12	.94
1875.....	1.12	1.15	1.18	1.22	1.27	1.21	1.10	1.07	1.09	1.07	1.07	1.07	1.13½
1876.....	1.07	1.08	1.10	1.10	1.06	.99	.93	.90	.83	.83	.88	.88	.97
1877.....	.98	.98	.88	.83	.81	.73	.73	.70	.79	.72	.73	.71	.80
1878.....	.70	.70	.68	.68	.63	.58	.58	.58	.58	.57	.55	.53	.61
1879.....	.53	.56	.56½	.56½	.51	.50	.50	.48	.48	.53	.58	.64	.54
1880.....	.67	.67	.68	.64	.61	.58	.55	.65	.66	.67	.70	.73	.65
1881.....	.93	.78	.83	.84	.81½	.78	.82	.87½	.93	.97	.93	.90	.85

Menhaden Oil Statistics.

	1877.	1878.	1879.	1880.	1881.
No. of factories in operation.....	56	56	60	70	97
No. of sailing vessels employed...	270	279	204	366	286
No. of steam vessels employed.....	63	64	81	67	73
No. of men employed.....	2,631	3,337	2,296	1,066	2,805
Amount of capital invested.....	\$2,047,612	\$2,350,000	\$2,502,500		
Number of fish caught.....	587,624,125	767,779,250	637,063,750	775,875,000	454,192,000
Gallons of oil made.....	2,426,589	3,809,233	2,258,901	2,034,920	1,266,549
Tons crude guano made.....	55,444	83,719	67,059	44,975	7,592
Tons guano dried.....	5,700	19,377	29,563	25,800	25,027
Gallons oil held by manufacturers at date of annual meeting.....		86,000	742,600	304,200	257,133
Tons guano held by manufacturers.....		1,640	885	663	425
Yield of oil per 1,000 fish.....	est. 5		4.8	4.00	2½

PRICE OF COTTONSEED OILS.

THE three tables following give the average price of crude, summer yellow and winter yellow cottonseed oil at New York for each month from January, 1873, to December, 1881, inclusive; also the average price for each year. The prices given in these tables are based on the current quotations for oils of prime quality. The lower grade oils show but little variation in their relative value to prime, from month to month.

CRUDE COTTONSEED OIL.

	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.
January.....	43 $\frac{1}{4}$	41	46	51 $\frac{1}{4}$	49 $\frac{1}{2}$	47	53	44 $\frac{1}{2}$	35
February.....	43 $\frac{1}{4}$	47 $\frac{1}{2}$	46	50 $\frac{1}{4}$	48	45 $\frac{1}{2}$	34	39 $\frac{1}{2}$	35 $\frac{1}{2}$
March.....	43 $\frac{1}{4}$	48 $\frac{1}{2}$	46 $\frac{1}{2}$	47 $\frac{1}{2}$	47	49 $\frac{1}{2}$	34 $\frac{1}{2}$	37	35
April.....	42 $\frac{1}{2}$	44 $\frac{1}{2}$	45	45 $\frac{1}{2}$	40 $\frac{3}{4}$	39 $\frac{1}{2}$	34	36	35
May.....	44 $\frac{1}{4}$	43 $\frac{1}{2}$	59	42 $\frac{1}{2}$	48 $\frac{1}{2}$	36 $\frac{1}{2}$	35	32 $\frac{1}{2}$	35
June.....	46 $\frac{1}{2}$	56 $\frac{1}{2}$	55	40	45 $\frac{1}{2}$	36 $\frac{1}{2}$	35	31 $\frac{1}{2}$	34 $\frac{1}{2}$
July.....	46	51 $\frac{1}{2}$	47 $\frac{1}{2}$	38 $\frac{1}{2}$	46 $\frac{1}{2}$	42 $\frac{1}{2}$	37	33	34
August.....	44 $\frac{1}{2}$	43 $\frac{1}{2}$	45	36 $\frac{1}{2}$	42 $\frac{1}{2}$	30	35	33 $\frac{1}{2}$	34
September.....	50	46	45	42	48 $\frac{1}{2}$	34 $\frac{1}{2}$	33	33 $\frac{1}{2}$	39 $\frac{1}{2}$
October.....	45	33 $\frac{1}{2}$	48	36 $\frac{1}{2}$	50	40	33 $\frac{1}{2}$	37 $\frac{1}{2}$	44 $\frac{1}{2}$
November.....	40 $\frac{1}{2}$	49 $\frac{1}{2}$	51 $\frac{1}{2}$	39	49 $\frac{1}{2}$	38 $\frac{1}{2}$	39 $\frac{1}{2}$	37 $\frac{1}{2}$	45 $\frac{1}{2}$
December.....	40	46	53 $\frac{1}{2}$	39	49 $\frac{1}{2}$	35 $\frac{1}{2}$	43 $\frac{1}{2}$	35	45 $\frac{1}{2}$
Average for year.....	44	46 $\frac{1}{4}$	48 $\frac{1}{4}$	42 $\frac{1}{4}$	46 $\frac{1}{2}$	39 $\frac{1}{2}$	35 $\frac{1}{2}$	35 $\frac{1}{2}$	37 $\frac{1}{4}$

SUMMER YELLOW COTTONSEED OIL.

	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.
January.....	49	47 $\frac{1}{2}$	52 $\frac{1}{2}$	59	51	52	40	52	42 $\frac{1}{2}$
February.....	49	52 $\frac{1}{2}$	52 $\frac{1}{2}$	58 $\frac{1}{2}$	54 $\frac{1}{2}$	51	40 $\frac{1}{2}$	49	42
March.....	48 $\frac{1}{2}$	53	52	56 $\frac{1}{2}$	51	50 $\frac{1}{2}$	40 $\frac{1}{2}$	46	45
April.....	48 $\frac{1}{2}$	51	56 $\frac{1}{2}$	54	50	47 $\frac{1}{2}$	40	41 $\frac{1}{2}$	44 $\frac{1}{2}$
May.....	49	51 $\frac{1}{2}$	69	52 $\frac{1}{2}$	52	49	42	40	45
June.....	52 $\frac{1}{2}$	60 $\frac{1}{2}$	64	48 $\frac{1}{2}$	50	48 $\frac{1}{2}$	43	41 $\frac{1}{2}$	45
July.....	54	59 $\frac{1}{2}$	58 $\frac{1}{2}$	48 $\frac{1}{2}$	51 $\frac{1}{2}$	47	44 $\frac{1}{2}$	40	43 $\frac{1}{2}$
August.....	55	58 $\frac{1}{2}$	54	47	53	47 $\frac{1}{2}$	42 $\frac{1}{2}$	40	44 $\frac{1}{2}$
September.....	57 $\frac{1}{2}$	54 $\frac{1}{2}$	54	47 $\frac{1}{2}$	52 $\frac{1}{2}$	45	42	41	53 $\frac{1}{2}$
October.....	48 $\frac{1}{2}$	56 $\frac{1}{2}$	54 $\frac{1}{2}$	45 $\frac{1}{2}$	53 $\frac{1}{2}$	45 $\frac{1}{2}$	43 $\frac{1}{2}$	42	60
November.....	47 $\frac{1}{2}$	51	60	48	55	45 $\frac{1}{2}$	47 $\frac{1}{2}$	42	55
December.....	47 $\frac{1}{2}$	53	57 $\frac{1}{2}$	49	55 $\frac{1}{2}$	41 $\frac{1}{2}$	49	42 $\frac{1}{2}$	51 $\frac{1}{2}$
Average for year.....	50 $\frac{1}{2}$	54 $\frac{1}{8}$	57 $\frac{1}{8}$	51 $\frac{1}{8}$	52 $\frac{1}{4}$	47 $\frac{1}{2}$	42 $\frac{1}{2}$	43 $\frac{1}{8}$	47 $\frac{1}{8}$

WINTER YELLOW COTTONSEED OIL.

	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.
January.....	61 $\frac{1}{4}$	54	60	58 $\frac{1}{2}$	53 $\frac{1}{2}$	57	49	56	48
February.....	60	59	60	59 $\frac{1}{2}$	58	55 $\frac{1}{2}$	48	55 $\frac{1}{2}$	51
March.....	57 $\frac{1}{2}$	62	58 $\frac{1}{2}$	55 $\frac{1}{2}$	56 $\frac{1}{2}$	55 $\frac{1}{2}$	47	53 $\frac{1}{2}$	54 $\frac{1}{2}$
April.....	57	60	61 $\frac{1}{2}$	57	54	51 $\frac{1}{2}$	.....	51 $\frac{1}{2}$	54
May.....	57 $\frac{1}{2}$	61 $\frac{1}{2}$	71	57	54	50 $\frac{1}{2}$	.....	51	54
June.....	59	67 $\frac{1}{2}$	70 $\frac{1}{2}$	55	54	50 $\frac{1}{2}$	.....	51	54
July.....	60	67 $\frac{1}{2}$	68	55	54	50 $\frac{1}{2}$	.....	53	54
August.....	59	67 $\frac{1}{2}$	67 $\frac{1}{2}$	50	56	51 $\frac{1}{2}$	47	53 $\frac{1}{2}$	54
September.....	60	67 $\frac{1}{2}$	67 $\frac{1}{2}$	50	57 $\frac{1}{2}$	47	47	55 $\frac{1}{2}$	59 $\frac{1}{2}$
October.....	60	67 $\frac{1}{2}$	60	51 $\frac{1}{2}$	57 $\frac{1}{2}$	52	46	54 $\frac{1}{2}$	66 $\frac{1}{2}$
November.....	56 $\frac{1}{2}$	61 $\frac{1}{2}$	60	51	57 $\frac{1}{2}$	52	40 $\frac{1}{2}$	53 $\frac{1}{2}$	62 $\frac{1}{2}$
December.....	53 $\frac{1}{2}$	60	58 $\frac{1}{2}$	51	57	50	53 $\frac{1}{2}$	49 $\frac{1}{2}$	58 $\frac{1}{2}$
Average for year.....	58 $\frac{1}{2}$	63	63 $\frac{1}{2}$	54 $\frac{1}{2}$	55 $\frac{1}{2}$	51 $\frac{1}{2}$	48 $\frac{1}{2}$	53 $\frac{1}{2}$	55 $\frac{1}{2}$

NOTE.—In the lines giving the average for the year the price is as nearly accurate as can be expressed by simple fractions.

PRICE OF CALCUTTA LINSEED OIL.

THE following table gives the average price of linseed oil made from Calcutta seed for each month from 1857 to 1881, inclusive—twenty-five years—and the average for each of the years named :

Years.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1857....	95	97	98	95	91	87	86	83	69	57	54	55	80½
1858....	55	55	59	66	65	65	70	79	85	76	71	72	68½
1859.....	76	82	75	73	71	69	59	57	57	57	56	59	66
1860.....	62	63	62	66	64	62	63	60	57	57	57	55	60½
1861.....	52	54	62	60	55	53	53	50	49	54	64	72	56½
1862.....	76	80	81	89	85	88	98	79	75	91	1.17	1.18	89½
1863.....	1.26	1.46	1.73	1.57	1.30	1.10	1.25	1.02	1.18	1.38	1.25	1.40	1.32½
1864.....	1.40	1.48	1.52	1.53	1.50	1.49	1.70	1.60	1.56	1.41	1.37	1.40	1.49½
1865.....	1.53	1.55	1.39	1.22	1.12	1.01	1.03	1.31	1.67	1.48	1.53	1.55	1.37
1866.....	1.50	1.51	1.44	1.38	1.57	1.76	1.95	1.71	1.83	1.68	1.42	1.36	1.59½
1867.....	1.30	1.40	1.43	1.43	1.46	1.49	1.40	1.23	1.23	1.14	1.00	1.00	1.26½
1868.....	1.15	1.18	1.19	1.15	1.18	1.14	1.03	1.08	1.10	1.04	.96	.98	1.09½
1869.....	1.05	1.06	1.03	1.05	1.04	1.03	1.00	.97	1.00	.97	.90	.88	1.00
1870.....	.90	.95	.94	.90	1.02	1.09	1.01	1.00	.91	.89	.89	.89	.95
1871.....	.91	.93	.92	.99	.97	.92	.88	.84	.78	.80	.73	.73	.86½
1872.....	.78	.86	.87	.89	.90	.92	.86	.84	.84	.85	.80	.85	.85½
1873.....	.87	.93	.93	.93	.95	.94	.85	.90	.97	.96	.90	.90	.92
1874.....	.97	1.02	1.00	1.01	.99	.96	.91	.88	.80	.80	.76	.78	.90½
1875.....	.80	.80	.77	.74	.69	.65	.62	.70	.63	.54	.59	.60	.67½
1876.....	.59	.57	.57	.56	.52	.49	.50	.53½	.51½	.53	.57½	.61	.54½
1877.....	.65	.64	.63	.64½	.73	.69	.62½	.57	.55	.58	.57½	.58	.62½
1878.....	.61	.63	.61	.59	.59	.57	.56	.56	.60	.62	.61	.62	.59½
1879.....	.63	.62	.63	.61	.61	.62	.64	.64	.63	.65	.71	.85	.65½
1880.....	.84	.84	.81½	.79½	.73½	.65	.60½	.58	.59	.60½	.60	.60	.70½
1881.....	.59½	.62½	.62	.60½	.58½	.58½	.58	.58½	.63½	.65	.68	.69½	.62

Buying Linseed Oil by Weight and Selling it by Measure.

THE weight adopted by sellers of linseed oil to represent a gallon is $7\frac{1}{2}$ lbs., at a temperature of 60° F., but the actual weight is $7\frac{1}{4}$ pounds, and at lower temperatures the weight is greater, thus entailing a loss on the seller by measure. The following table gives the weight of a gallon of linseed oil at different temperatures, from 30° to 90° F. :

At 30° temp.	1 gallon weighs.....	7.9 lbs.
“ 40° “	1 “	7.87 “
“ 50° “	1 “	7.84 “
“ 60° “	1 “	7.8 “
“ 70° “	1 “	7.77 “
“ 80° “	1 “	7.74 “
“ 90° “	1 “	7.7 “

The quantity that the buyer receives for $7\frac{1}{2}$ lbs. at several temperatures at the present mode of calculation is as follows :

If the temperature is 30° ,	$7\frac{1}{2}$ lbs.	.95 gall.
“ “ “ 60° ,	$7\frac{1}{2}$ “	.96 “
“ “ “ 90° ,	$7\frac{1}{2}$ “	.97 “

From these figures it will be seen that at 60° temp. there is shortage of four gallons in every hundred, or about two gallons in each barrel, and if the temperature is as low as 30° the loss is still greater, being as much as five gallons in every hundred.

THE PRICE OF CALCUTTA LINSEED.

IN the following table the prices given are those ruling on the first of the month for each month from 1861 to 1881—twenty-one years—and the average price for each year :

Years.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1861	.....	1.51	.....	1.71	1.70	.....	1.49	1.62 $\frac{1}{2}$	1.70	.....	2.00	2.15	1.72
1862	.....	2.45	.....	2.30	2.05	2.17	2.35	2.50	2.35	2.50	3.20	3.40	2.52 $\frac{1}{2}$
1863	2.40	3.75	4.30	4.00	3.75	3.05	3.71 $\frac{1}{2}$	3.00	2.80	.....	3.60	3.75	3.46 $\frac{1}{2}$
1864	3.80	3.95	4.10	4.10	4.30	4.10	4.50	4.75	4.40	3.65	3.90	4.25	4.14 $\frac{1}{2}$
1865	4.70	2.20	2.18	2.10	2.20	2.20	2.20	2.17 $\frac{1}{2}$	2.50	2.50	2.45	2.55	2.41 $\frac{1}{2}$
1866	2.50	2.50	2.40	2.30	2.60	2.70	2.75	2.90	3.00	2.70	2.45	2.50	2.60 $\frac{1}{2}$
1867	2.30	2.40	2.40	2.50	2.50	2.65	2.60	2.50	2.40	2.35	2.00	2.00	2.38 $\frac{1}{2}$
1868	2.10	2.25	2.25	2.35	2.25	2.27 $\frac{1}{2}$	2.20	2.20	2.17 $\frac{1}{2}$	2.22 $\frac{1}{2}$	2.20	2.10	2.21 $\frac{1}{2}$
1869	2.15	2.27 $\frac{1}{2}$	2.27 $\frac{1}{2}$	2.25	2.20	2.12 $\frac{1}{2}$	2.10 $\frac{1}{2}$	2.15	2.12	2.17 $\frac{1}{2}$	2.20	2.20	2.18 $\frac{1}{2}$
1870	2.20	2.20	2.20	2.17 $\frac{1}{2}$	2.17 $\frac{1}{2}$	2.25	2.25	2.30	2.22 $\frac{1}{2}$	2.22 $\frac{1}{2}$	2.17 $\frac{1}{2}$	2.05	2.21 $\frac{1}{2}$
1871	2.15	2.30	2.30	2.30	2.32 $\frac{1}{2}$	2.40	2.35	2.22 $\frac{1}{2}$	2.25	2.20	2.15	2.20	2.28 $\frac{1}{2}$
1872	2.25	2.45	2.50	2.57 $\frac{1}{2}$	2.55	2.45	2.25	2.35	2.35	2.35	2.35	2.45	2.40 $\frac{1}{2}$
1873	2.51 $\frac{1}{2}$	2.62 $\frac{1}{2}$	2.67 $\frac{1}{2}$	2.67 $\frac{1}{2}$	2.70	2.70	2.60	2.50	2.50	2.60	2.50	2.30	2.57 $\frac{1}{2}$
1874	2.45	2.70	2.70	2.65	2.65	2.60	2.45	2.50	2.40	2.35	2.35	2.40	2.51 $\frac{1}{2}$
1875	2.40	2.30	2.20	2.10	2.10	2.05	1.85	1.90	2.00	1.85	1.90	2.00	2.02 $\frac{1}{2}$
1876	2.00	1.92 $\frac{1}{2}$	1.87 $\frac{1}{2}$	1.85	1.85	1.85	1.82 $\frac{1}{2}$	1.80	1.77 $\frac{1}{2}$	1.80	2.00	2.05	1.88 $\frac{1}{2}$
1877	2.12 $\frac{1}{2}$	2.12 $\frac{1}{2}$	2.05	2.00	2.17 $\frac{1}{2}$	2.15	2.15	2.05	2.05	2.02 $\frac{1}{2}$	2.05	2.05	2.08 $\frac{1}{2}$
1878	2.10	2.10	2.10	1.95	1.95	1.85	1.95	1.92 $\frac{1}{2}$	2.05	2.05	2.05	2.05	2.01
1879	2.00	2.00	1.95	1.95	1.95	2.05	2.25	2.15	2.00	2.00	2.25	2.37 $\frac{1}{2}$	2.08 $\frac{1}{2}$
1880	2.37 $\frac{1}{2}$	2.42 $\frac{1}{2}$	2.50	2.50	2.30	2.20	1.90	1.90	1.85	2.00	2.00	2.05	2.16 $\frac{1}{2}$
1881	2.00	2.00	2.07 $\frac{1}{2}$	2.07 $\frac{1}{2}$	2.00	1.95	1.95	1.85	1.95	2.08 $\frac{1}{2}$	2.11	2.12 $\frac{1}{2}$	1.93

LINSEED STATISTICS.

THE following statistics of Calcutta linseed show the position of that article on the 1st of January of 1879, 1880 and 1881, with the deliveries, prices, etc.:

	1879.	1880.	1881.
	Bags.	Bags.	Bags.
Imported into the United States during the year.....	418,099	381,305	152,712
On the way for the United States, by mail, to Nov. 28.....	46,079	34,042	44,354
On the way for the United States by cable, to Dec. 31.....	72,200	68,000	57,500
Estimated sailings for month of January.....	30,000	10,000	25,000
Stock in importers' and speculators' hands in New York.....	None	64,250	61,500
Supply.....	148,279	176,292	188,354
Imported from Europe from January 1 to date.....	6,884	None	None
Stock on hand January 1, all hands.....	31,805	40,000	89,250
Deliveries since January 1, New York and Boston.....	446,788	365,596	155,462
“ past 30 days.....	30,387	6,950	2,100
Consumption for years.....	416,788	380,598	173,962
Prices Current, December 31 (56 lbs. per bushel).....	\$2.37½	\$2.00@2.05	\$2.12½

			Bags.
Consumption in the United States for the year.....	1872	864,733	
" " " " " " " " " " " " " " " " " "	1873	787,552	
" " " " " " " " " " " " " " " " " "	1874	995,355	
" " " " " " " " " " " " " " " " " "	1875	981,203	
" " " " " " " " " " " " " " " " " "	1876	610,995	
" " " " " " " " " " " " " " " " " "	1877	426,320	
" " " " " " " " " " " " " " " " " "	1878	366,000	
" " " " " " " " " " " " " " " " " "	1879	416,788	
" " " " " " " " " " " " " " " " " "	1880	380,598	
" " " " " " " " " " " " " " " " " "	1881	173,962	

The yield of domestic seed for each year from 1868 is given as follows :

	Bushels.		Bushels.		Bushels.
1868.....	2,500,000	1873.....	2,100,000	1878.....	4,500,000
1869.....	2,500,000	1874.....	2,550,000	1879.....	5,750,000
1870.....	1,800,000	1875.....	3,750,000	1880.....	8,500,000
1871.....	3,000,000	1876.....	2,500,000	1881.....	6,500,000
1872.....	2,700,000	1877.....	4,000,000		

NITRATE OF SODA STATISTICS.

IN the following table is given the imports of nitrate of soda into the United States, and the deliveries for each year since 1864, also the stock on hand and the price in bond at the close of each year. The amounts are in bags and the price per pound. The second table gives the exports, in Spanish quintals of one hundred pounds, from Iquique for the past forty-one years, also the number of vessels engaged and the price in Liverpool per cwt :

IMPORTS, STOCKS AND PRICES.

Years.	Im-ports.	Deliver-ies.	Stocks, Dec. 31.	Price, Dec. 31.	Years.	Im-ports.	Deliver-ies.	Stock, Dec. 31.	Price, Dec. 31.
1864	83,761	64,444	23,700	.....	1873	152,912	181,082	24,984	3½@3½
1865	47,276	58,476	12,500	.....	1874	217,182	167,991	74,175	3
1866	84,025	68,069	23,457	.....	1875	116,884	149,610	41,449	2½@2½
1867	72,750	73,200	25,133	.....	1876	173,795	138,218	77,026	2½@3
1868	56,840	72,473	9,500	.....	1877	130,120	167,135	40,001	3½
1869	99,842	90,514	18,825	.....	1878	196,820	156,784	80,047	2½@3
1870	105,448	97,007	26,769	3¼@3½	1879	167,312	212,330	35,039	4½
1871	143,467	138,715	25,882	3½@3½	1880	225,414	234,414	26,040	3½
1872	189,371	161,299	53,154	3½@3½	1881	351,112	372,361	34,791	3¾/16

EXPORT OF NITRATE OF SODA FROM IQUIQUE FROM 1830 TO 1880, BOTH INCLUSIVE.

Years.	No. of Vessels	Quintals, Spanish, of 100 lbs.	Price in Liverpool per cwt. of 112 lbs.	Years.	No. of Vessels	Quintals, Spanish, of 100 lbs.	Price in Liverpool per cwt. of 112 lbs.
1830	4	18,700	----	*1856	98	811,603	18/6
1831	12	40,385	----	*1857	123	1,095,833	18/0
1832	15	52,500	----	*1858	124	1,220,240	18/0
1833	26	92,700	----	1859	140	1,570,248	15/3
1834	36	147,800	----	1860	120	1,370,248	12/6
1835	39	140,399	----	1861	118	1,358,691	13/9
1836	45	158,534	----	1862	147	1,629,017	12/9
1837	38	165,369	----	1863	144	1,540,963	14/6
1838	31	129,610	----	1864	168	1,090,587	14/0
1839	36	149,576	----	1865	200	2,442,459	12/6
1840	45	227,362	----	1866	174	2,187,685	10/3
1841	52	278,488	----	1867	199	2,550,327	10/6
1842	65	359,918	----	†1868	134	1,906,503	15/0
1843	67	369,317	----	1869	183	2,507,052	15/0
1844	74	380,191	----	*1870	226	2,943,413	15/3
1845	70	376,239	----	*1871	255	3,605,906	16/3
1846	66	390,148	----	1872	308	4,420,764	15/10
1847	70	383,097	11/0	1873	417	6,263,767	14/2
1848	75	485,089	11/9	1874	332	5,583,260	12/3
1849	69	430,102	13/9	1875	427	7,191,114	11/9
1850	81	511,845	14/0	1876	393	7,050,764	11/6
1851	89	699,406	13/3	1877	240	4,521,654	14/0
1852	95	562,989	15/9	1878	290	5,909,213	15/0
1853	124	866,241	18/3	1879	108	2,065,350	14/3
1854	101	720,465	18/0	1880	---	2,495,000	15/3
1855	121	939,888	18/0	1881	---	4,612,842	14/8

* War in Europe.

† Earthquake.

QUICKSILVER STATISTICS.

SOME interesting statistics of the production, exports and price of quicksilver are given in the annexed table for the past thirty-two years. The second column gives the highest price per bottle in London, the third column the lowest price; the fourth column gives the average price per pound in San Francisco; the fifth column shows the annual production of the California mines, and the last column gives the annual exports in flasks from San Francisco:

Year.	Highest.			Lowest.			Average.	Production.	Exports.
1850	£15	0s.	0d.	£13	2s.	6d.	-----	7,723	-----
1851	13	15	0	12	5	0	-----	27,779	-----
1852	11	10	0	9	2	6	-----	20,000	900
1853	8	15	0	8	2	6	-----	22,284	12,737
1854	7	15	0	7	5	0	-----	30,004	20,963
1855	6	17	6	6	10	0	-----	33,000	27,165
1856	6	10	0	6	10	0	-----	30,000	23,740
1857	6	10	0	6	10	0	-----	28,204	27,262
1858	7	10	0	7	5	0	-----	31,000	24,142
1859	7	5	0	7	0	0	49 c.	13,000	3,399
1860	7	0	0	7	0	0	40	10,000	9,448
1861	7	0	0	7	0	0	42	35,000	35,995
1862	7	0	0	7	0	0	42 $\frac{2}{3}$	42,000	33,747
1863	7	0	0	7	0	0	50	40,531	26,014
1864	9	0	0	7	10	0	53 $\frac{2}{3}$	47,489	36,927
1865	8	0	0	7	17	6	55	53,000	42,469
1866	8	0	0	6	17	6	47	46,550	30,287
1867	7	10	0	6	16	0	45 $\frac{1}{2}$	47,000	28,853
1868	6	17	0	6	16	0	40 $\frac{3}{4}$	47,728	44,506
1869	6	7	0	6	16	0	41 $\frac{1}{2}$	33,811	24,415
1870	10	0	0	6	16	0	41 $\frac{3}{4}$	30,077	13,788
1871	12	0	0	9	0	0	99	21,686	15,205
1872	13	0	0	10	0	0	80	31,621	13,089
1873	20	0	0	12	10	0	98	27,642	6,359
1874	26	0	0	19	0	0	1.37 $\frac{1}{2}$	27,756	6,770
1875	24	0	0	9	17	6	85	50,250	28,960
1876	12	0	0	7	17	6	53 $\frac{2}{3}$	75,074	41,140
1877	9	10	0	7	2	6	46	79,396	46,280
1878	7	5	0	6	7	6	42 $\frac{1}{2}$	68,880	34,260
1879	8	15	0	5	17	6	38	73,684	52,180
1880	7	15	0	6	7	6	39	59,926	34,648
1881	6	2	6	4	0	0	37 $\frac{1}{2}$	59,610	35,269

Leading English brokers estimate the present rate of consumption as follows: Europe, excluding England, 30,000 to 35,000 per annum; England, 12,000 to 15,000; California, 8,000 to 12,000; Mexico and West Coast, 20,000 to 25,000; China, 25,000 to 30,000; New York, etc., 10,000 to 12,000; sundries, 2,000 to 3,000. Total number of bottles, 107,000 to 132,000. The average consumption of the last ten years, 1871 to 1875, 85,000 per annum, and 1876 to 1880, 120,000 per annum, or an increase of 41 per cent. If 1881 to 1885 increases similarly it would be 168,000 per annum.

From 1850 to 1858 no reliable record of the price at San Francisco was obtainable. No exports are given for 1850 and 1851.

THE PRICE OF SPIRITS TURPENTINE.

THE following table gives the average price for each month from 1856 to 1881, both years inclusive; also the yearly average for each year. The average price for the past ten years was 39·7 cents per gallon:

Year.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1856.....	41½	40½	39	38½	40	36½	37½	42	43	42	43	45	41
1857.....	51	52	49	47½	50	47½	47	47½	46½	40	42	40½	47
1858.....	39	45½	48½	48	47½	46½	44	46½	48½	50	50	48½	43½
1859.....	49½	49½	52½	53	53	47½	45½	41½	46½	47	46	44½	48
1860.....	44½	44½	47½	43½	47½	43½	38	39½	40	41	39	33½	44
1861.....	35½	35½	36	43½	75	75	81½	1.27½	1.23	1.50	1.39½	1.39½	88½
1862.....	1.40½	1.27	1.04½	1.23	1.49½	1.48½	1.67	2.26	2.30½	2.34½	2.59	2.57	1.72½
1863.....	2.62½	2.72½	3.20	3.10	3.31	3.55	3.50	2.87½	2.57	2.89	3.11	2.92½	3.08½
1864.....	2.97½	3.05	3.55½	3.14	3.08	3.09	3.65	3.54	3.14	2.26	2.39	2.14	3.00½
1865.....	2.02	1.87	1.97	2.20	2.44	1.65	1.54	1.22	1.10	1.11	1.11	1.07	1.52½
1866.....	99½	90½	91	90	96	90½	74½	71½	68	77½	70½	70	83½
1867.....	67½	69½	74½	77	64½	60½	58½	59½	59½	56½	55	52½	63½
1868.....	54½	66½	68½	68½	58½	45½	44	45½	44½	44	46½	46	53
1869.....	53½	59	51½	49½	47	43½	42½	42½	43½	46½	47½	45½	47½
1870.....	45½	47	46	46½	41½	38½	39	39½	40	44½	46	47½	41
1871.....	48½	53	52½	54½	53½	47½	53	52½	58½	68½	68½	67	56½
1872.....	70	83	77	66	61	56	51½	52	60	64	63½	60½	63½
1873.....	63½	63½	62½	55½	49½	46	45	45½	42½	42	40	41½	42
1874.....	46½	49½	48½	45	40	39½	36	35½	35½	37½	36	35½	40½
1875.....	37½	33½	36½	37½	35½	32½	32	32½	32½	39½	40½	37½	35½
1876.....	37½	36½	39½	38½	34½	30	30½	29½	32½	35	38½	44½	33½
1877.....	46½	41½	40	34½	33½	31½	22	34½	35½	34½	35½	32	35½
1878.....	31½	32½	31	30½	29½	29½	28½	27½	27½	28½	29½	28½	29½
1879.....	28½	29½	29	32	28½	27	27	26½	27	35	40½	41	31
1880.....	43½	42½	48½	35	28½	28½	27	31½	37½	43½	45½	45½	38½
1881.....	47½	46½	46	41	38	42½	42½	45½	53½	52½	55½	55½	47½

Detection of the Presence of Water in Alcohol and Ether.

ACCORDING to Carl Mann, if an aqueous solution of 2 parts of crystalline tartaric acid is mixed with one part of molybdic acid and evaporated to incipient fusion in a porcelain capsule, the deep blue mass which is formed, if heated with 30 to 40 parts of water, yields along with a fixed residue a faint yellowish brown filtrate, holding in solution the citrate of a molybdenum compound, which has the property of appearing deep blue in its anhydrous state, but almost colorless when hydrated. If a slip of filter paper is steeped in this molybdenic solution (not too dilute) and dried at 37° C. the blue color reappears with great intensity. The paper, if screened from direct sunlight, retains its color. If it is plunged in pure water the blue color disappears at once, the paper becomes white and the water is not colored. At 10° the decoloration is instantaneous; at -6° to -7° in two or three seconds, and at -12° in five to eight. With absolute alcohol or ether in a stoppered bottle the blue color of the paper remains unaffected. This reagent for water is not acted on by acetone, aldehyde, methylic alcohol and mixtures of amyl and ethylic alcohol. If plunged in spirit of wine the blue color disappears more rapidly the more water is present.

THERMOMETRICAL SCALES.

TABLE showing the relative proportions of Fahrenheit's, Reaumur's and the Centigrade thermometrical scales :

F.	R.	C.	F.	R.	C.	F.	R.	C.	F.	R.	C.	F.	R.	C.
212	80.0	100.0	163	58.2	72.7	114	36.4	45.5	65	14.6	18.3	16	-7.1	-8.8
211	79.5	99.4	162	57.7	72.2	113	36.0	45.0	64	14.2	17.7	15	-7.5	-9.5
210	79.1	98.8	161	57.3	71.6	112	35.5	44.4	63	13.7	17.2	14	-8.0	-10.0
209	78.6	98.3	160	56.8	71.1	111	35.1	43.8	62	13.3	16.6	13	-8.4	-10.5
208	78.2	97.7	159	56.4	70.5	110	34.6	43.3	61	12.8	16.1	12	-8.8	-11.1
207	77.7	97.2	158	56.0	70.0	109	34.2	42.7	60	12.4	15.5	11	-9.3	-11.6
206	77.3	96.6	157	55.5	69.4	108	33.7	42.2	59	12.0	15.0	10	-9.7	-12.2
205	76.8	96.1	156	55.1	68.8	107	43.3	41.6	58	11.5	14.4	9	-10.2	-12.7
204	76.4	95.5	155	54.6	68.3	106	32.8	41.1	57	11.1	13.8	8	-10.6	-13.3
203	76.0	95.0	154	54.2	67.7	105	32.4	40.5	56	10.6	13.3	7	-11.1	-13.8
202	75.5	94.4	153	53.7	67.2	104	32.0	40.0	55	10.2	12.7	6	-11.5	-14.4
201	75.1	93.8	152	53.3	66.6	103	31.5	39.4	54	9.7	12.2	5	-12.0	-15.0
200	74.6	93.3	151	52.8	66.1	102	31.1	38.8	53	9.3	11.6	4	-12.4	-15.5
199	74.2	92.7	150	52.4	65.5	101	30.6	38.3	52	8.8	11.1	3	-12.8	-16.1
198	73.7	92.2	149	52.0	65.0	100	30.2	37.7	51	8.4	10.5	2	-13.3	-16.6
197	73.3	91.6	148	51.5	64.4	99	29.7	37.2	50	8.0	10.0	1	-13.7	-17.2
196	72.8	91.1	147	51.1	63.8	98	29.3	36.6	49	7.5	9.4	0	-14.2	-17.7
195	72.4	90.5	146	50.6	63.3	97	28.8	36.1	48	7.1	8.8	-1	-14.6	-18.3
194	72.0	90.0	145	50.2	62.7	96	28.4	35.5	47	6.6	8.3	-2	-15.1	-18.8
193	71.5	89.4	144	49.7	62.2	95	28.0	35.0	46	6.2	7.7	-3	-15.5	-19.4
192	71.1	88.8	143	49.3	61.6	94	27.5	34.4	45	5.7	7.2	-4	-16.0	-20.0
191	70.6	88.3	142	48.8	61.1	93	27.1	33.8	44	5.3	6.6	-5	-16.4	-20.5
190	70.2	87.7	141	48.4	60.5	92	26.6	33.3	43	4.8	6.1	-6	-16.8	-21.1
189	69.7	87.2	140	48.0	60.0	91	26.2	32.7	42	4.4	5.5	-7	-17.3	-21.6
188	65.3	86.6	139	47.5	59.4	90	25.7	32.2	41	4.0	5.0	-8	-17.7	-22.2
187	68.8	86.1	138	47.1	58.8	89	25.3	31.6	40	3.5	4.4	-9	-18.2	-22.7
186	68.4	85.5	137	46.6	58.3	88	24.8	31.1	39	3.1	3.8	-10	-18.6	-23.3
185	68.0	85.0	136	46.2	57.7	87	24.4	30.5	38	2.6	3.3	-11	-19.1	-23.8
184	67.5	84.4	135	45.7	57.2	86	24.0	30.0	37	2.2	2.7	-12	-19.5	-24.4
183	67.1	83.8	134	45.3	56.6	85	23.5	29.4	36	1.7	2.2	-13	-20.0	-25.0
182	66.6	83.3	133	44.8	56.1	84	23.1	28.8	35	1.3	1.6	-14	-20.4	-25.5
181	66.2	82.7	132	44.4	55.5	83	22.6	28.3	34	0.8	1.1	-15	-20.8	-26.1
180	65.7	82.2	131	44.0	55.0	82	22.2	27.7	33	0.4	0.5	-16	-21.3	-26.6
179	65.3	81.6	130	43.5	54.4	81	21.7	27.2	32	0.0	0.0	-17	-21.7	-27.2
178	64.8	81.1	129	43.1	53.8	80	21.3	26.6	31	-0.4	-0.5	-18	-22.2	-27.7
177	64.4	80.5	128	42.6	53.3	79	20.8	26.1	30	-0.8	-1.1	-19	-22.6	-28.3
176	64.0	80.0	127	42.2	52.7	78	20.4	25.5	29	-1.3	-1.6	-20	-23.1	-28.8
175	63.5	79.4	126	41.7	52.2	77	20.0	25.0	28	-1.7	-2.2	-21	-23.5	-29.4
174	63.1	78.8	125	41.3	51.6	76	19.5	24.4	27	-2.2	-2.7	-22	-24.0	-30.0
173	62.6	78.3	124	40.8	51.1	75	19.1	23.8	26	-2.6	-3.3	-23	-24.4	-30.5
172	62.2	77.7	123	40.4	50.5	74	18.6	23.3	25	-3.1	-3.8	-24	-24.8	-31.1
171	61.7	77.2	122	40.0	50.0	73	18.2	22.7	24	-3.5	-4.4	-25	-25.3	-31.6
170	61.3	76.6	121	39.5	49.4	72	17.7	22.2	23	-4.0	-5.0	-26	-25.7	-32.2
169	60.8	75.1	120	39.1	48.8	71	17.3	21.6	22	-4.4	-5.5	-27	-26.2	-32.7
168	60.4	75.5	119	38.6	48.3	70	16.8	21.1	21	-4.8	-6.1	-28	-26.6	-33.3
167	60.0	75.0	118	38.2	47.7	69	16.4	20.5	20	-5.3	-6.6	-29	-27.1	-33.8
166	59.5	74.4	117	37.7	47.2	68	16.0	20.0	19	-5.7	-7.2	-30	-27.5	-34.4
165	59.1	73.8	116	37.3	46.6	67	15.5	19.4	18	-6.2	-7.7	-31	-28.0	-35.0
164	58.6	73.3	115	36.8	46.1	66	15.1	18.8	17	-6.6	-8.3			

EQUALIZATION OF THERMOMETERS.

Freezing Point.			Boiling Point.		
Fahrenheit.....	= 32°		Fahrenheit.....	= 212°	
Centigrade.....	= 0°		Centigrade.....	= 100°	
Reaumur.....	= 0°		Reaumur.....	= 80°	

To convert Fahrenheit to Centigrade $\frac{5(F - 32)}{9}$ = Centigrade.

“ Centigrade to Fahrenheit $\frac{9C}{5} + 32$ = Fahrenheit.

“ Fahrenheit to Reaumur $\frac{4(F - 32)}{9}$ = Reaumur.

“ Reaumur to Fahrenheit $\frac{9R}{4} + 32$ = Fahrenheit.

GLASS STATISTICS.

The following tables are from the official reports of the Census Bureau and Bureau of Statistics:

TOTAL GLASS FACTORIES IN THE UNITED STATES.

Classes.	Estab-lish-ments.	Capital.	Total Fur-naces.	Total No. Pots.	No. Em-ployes.	Value Materials.	Wages paid, One Year.	Value Product.
Plate glass.....	6	\$2,587,000	10	116	956	\$138,457	\$292,253	\$868,305
Window glass...	56	4,873,155	86	747	3,890	1,849,530	2,139,531	5,047,313
Glassware.....	82	7,189,278	154	1,459	12,387	3,289,064	4,446,217	9,534,020
Green glass.....	50	4,766,166	80	493	6,589	2,414,352	2,234,295	5,563,826
Total.....	194	\$19,415,599	330	2,815	23,822	\$7,991,303	\$9,112,301	\$21,013,464

The number of gas furnaces is 17; of tank furnaces, 5; other kinds, 308; total, 330.

The number of males employed over 16 years of age, is 17,528; under 16 years, 5,522; females over 15 years, 678; under 15 years, 94.

There were 34 establishments, with 369 pots, that made no glass in the census year, and which are not included in the above. Among these was one plate glass and nine window glass factories. One new plate glass and four new window glass factories were in progress.

It is impossible to make a satisfactory comparison between the results given above and those for 1870. The division into classes in 1870 was very imperfect, and it is evident that many establishments are not correctly classified. Assuming, however, that the classes "Plate-glass," "Glassware not specified," and "Window-glass," of the ninth census include the same establishments as are classed in this report as Plate, Window, Glassware and Green Glass factories, the following comparison can be made:

	1870.	1880.
Number of establishments.....	154	194
Employes.....	15,367	23,822
Capital.....	\$13,826,142	\$19,515,599
Wages paid.....	7,589,110	9,112,301
Materials used.....	5,904,365	7,991,303
Value of product.....	18,470,507	21,013,464

WINDOW GLASS FACTORIES.

Of the 56 window glass factories in the country six with six furnaces, containing 48 pots, were idle during the census year. Three works were also idle in part. Four new factories were in process of construction and sixteen pots were added to old factories. The following are the window glass statistics:

State.	Estab-lish-ments	Capital.	No. of pots.	No. Em-ployes.	Value of Materials.	Wages Paid.	Total number of boxes of 50 square ft. produced.	Total Value.
Illinois.....	3	\$200,000	48	235	\$104,474	\$145,703	\$115,271	\$373,343
Indiana.....	1	175,000	30	169	105,000	103,000	91,759	229,397
Iowa.....	1	25,000	8	.....	.....	.....	.....	.....
Maryland.....	4	305,000	42	222	142,277	131,454	141,000	332,000
Massachusetts.....	1	75,000	22	99	30,245	44,947	41,866	104,002
Michigan.....	1	65,000	8	54	35,113	30,000	30,000	90,000
Missouri.....	1	40,000	14	48	27,706	32,000	24,000	68,000
New Jersey.....	9	723,355	116	699	289,803	266,294	296,685	729,155
New York.....	9	575,000	96	410	224,567	195,576	316,748	540,903
Ohio.....	5	410,000	46	273	106,510	146,861	127,122	358,000
Pennsylvania.....	21	2,279,800	207	1,691	772,834	1,043,701	760,283	2,222,513
Total.....	56	\$4,873,155	747	3,890	\$1,849,530	\$2,139,536	\$1,864,734	\$5,047,313

The total number of furnaces is 86, and of pots 747. There are 3,755 males employed over sixteen, and 132 under sixteen years old; females employed, 3.

PLATE GLASS FACTORIES.

Of the six establishments making plate glass, five produced rough plate, and one rolled cathedral plate. Three of the five producing rough plate polished the larger part of their product. The two others made no polished glass, though one had the machinery necessary to the work.

State.	Establish-ments.	Capital.	No. of foundries.	No. of pots.	No. employes.	Value of materials.	Wages paid.	Total cast (square ft.).	Total polished (square ft.).	Value of product.*	Total used rough (square ft.).
Indiana.....	2	\$1,142,000	5	64	513	\$298,733	\$160,850	970,000	642,000	\$496,400	130,000
Kentucky.....	1	250,000	2	16	35	2,750	1,088	20,684	.....	3,512	20,684
Massachusetts..	2	45,000	2	20	58	24,049	10,395	209,543	.....	45,843	209,543
Missouri.....	1	1,150,000	1	16	350	112,925	120,000	500,000	400,000	335,000	17,000
Total.....	6	\$2,587,000	10	116	956	\$438,457	\$292,253	1,700,227	1,042,000	\$868,305	377,227

*This does not include value of cast plate in process of manufacture, nor of rough plate broken up and used as cullet, but includes only the value of polished plate, and that part of the rough plate that was sold.

Among the furnaces are two out of a total of ten furnaces using gas. Of the employes there are 822 males over 16 and 66 under 16; females, 55 over 15, and 13 under 15 years of age.

IMPORTS OF PLATE AND WINDOW GLASS.

The following table shows the quantity and value of plate and window glass imported at all ports of the United States during the fiscal years 1879, '80 and '81, and will be found convenient for reference and comparison:

ARTICLES.	1879.		1880.		1881.	
	Quantities.	Values.	Quantities.	Values.	Quantities.	Values.
PLATE-GLASS.						
<i>Cast, Polished, not Silvered.</i>	<i>Sq. Feet.</i>	<i>Dollars.</i>	<i>Sq. Feet.</i>	<i>Dollars.</i>	<i>Sq. Feet.</i>	<i>Dollars.</i>
Not above 10×15 inches.....	14,338.00	2,711	108,732.00	16,200	68,154.67	14,878
Above 10×15 and not above 16×24.	27,317.60	8,724	46,185.80	14,721	88,114.25	28,861
Above 16×24 and not above 24×30.	90,434.91	32,888	157,804.92	50,326	233,679.84	84,138
Above 24×30 and not above 24×60.	562,071.08	240,480	719,373.06	285,419	691,219.05	286,707
Above 24×60.....	869,635.12	421,401	874,521.64	399,741	1,302,221.41	592,245
<i>Silvered, or Looking-glass Plates.</i>						
Not above 10×15 inches.....	128,904.75	32,992	230,728.42	50,823	159,459.49	32,976
Above 10×15 and not above 16×24.	697,652.50	165,437	1,000,349.42	269,421	1,050,696.67	258,608
Above 16×24 and not above 24×30.	1,081,357.00	342,750	1,648,187.31	557,998	1,708,361.66	491,604
Above 24×30 and not above 24×60.	102,961.00	45,460	153,637.00	75,218	182,704.50	73,586
Above 24×60.....	1,034.66	1,246	6,020.66	4,275	841.00	915
<i>Rough, Fluted or Rolled, (excess of one pound per square foot in proportion):</i>						
Above 10×15 and not above 16×24.	405.00	29	10,785.00	196	7,300.00	259
Above 16×24 and not above 24×30.	7,202.00	365	1,957.00	89	19,031.00	821
Above 24×30.....	173,384.00	7,693	757,908.00	25,426	512,808.50	26,652
WINDOW GLASS.						
<i>Cylinder, Crown or Con., Unpolished.</i>	<i>Pounds.</i>		<i>Pounds.</i>		<i>Pounds.</i>	
Not above 10×15 inches.....	3,582,364	90,357	12,041,215	308,978	12,700,930	333,712
Above 10×15 and not above 16×24.	5,045,243	140,367	11,077,758	333,063	12,253,212	366,840
Above 16×24 and not above 24×30.	5,836,463	184,886	10,693,808	351,464	10,953,733	363,543
Above 24×30.....	6,225,791	237,233	10,137,070	412,472	9,654,822	361,208
<i>Polished.</i>	<i>Sq. Feet.</i>		<i>Sq. Feet.</i>		<i>Sq. Feet.</i>	
Not above 10×15.....	1,675.00	325	11,900.66	2,110	1,916.00	563
Above 10×15 and not above 16×24.	15,460.50	3,256	26,575.58	4,153	8,100.17	2,245
Above 16×24 and not above 24×30.	21,031.00	6,023	36,938.75	10,605	28,523.08	9,396
Above 24×30 and not above 24×60.	4,039.00	1,690	12,651.66	4,229	11,357.25	4,349
Above 24×60.....	.....	.....	.....	.....	10.66	6
Totals.....		2,590,559		4,182,225		4,586,120

GREEN GLASS FACTORIES.

State.	Fac-tories.	Capital.	Fur-naces.	Pots.	Em-ployes.	Value of materials.	Wages paid.	Value of product.
California.....	1	\$75,000	1	7	113	\$48,070	\$45,924	\$103,393
Illinois.....	2	190,000	4	36	507	196,368	196,324	528,000
Indiana.....	1	125,000	2	14	180	30,000	20,357	64,984
Kentucky.....	3	295,000	3	17	278	70,888	45,023	169,563
Maryland.....	2	76,000	3	17	305	66,405	80,800	170,000
Massachusetts.....	1	100,000	1	..	..	..	..	..
Missouri.....	2	140,000	4	24	350	168,205	167,759	392,790
Ohio.....	3	139,000	4	24	190	43,553	44,000	115,000
New Jersey.....	14	1,684,666	30	167	1,979	698,543	783,744	1,681,015
New York.....	9	560,000	12	57	821	293,297	259,666	722,322
Pennsylvania.....	12	1,381,500	16	119	1,866	793,925	590,704	1,616,759
Total.....	50	\$4,766,166	80	493	6,589	\$2,414,252	\$2,234,295	\$5,563,826

Of idle factories there was one in Illinois with a capital of \$5,000, 1 furnace and 5 pots; Massachusetts, one with \$100,000 capital, 1 furnace and 11 pots; Ohio, two, with \$44,000 capital, 2 furnaces and 12 pots; New Jersey, three factories with \$60,000 capital, 3 furnaces and 23 pots; Pennsylvania, one factory, \$10,000 capital, 1 furnace and 6 pots. These figures show a total of eight idle factories, with \$219,000 capital, 8 furnaces and 57 pots.

No. of Lights of Window Glass per Box of 50 Feet.

Size.	No.	Size.	No.	Size.	No.	Size.	No.	Size.	No.	Size.	No.
6 x 8	150	12 x 26	23	15 x 38	13	20 x 34	11	26 x 30	9	32 x 36	6
6½ x 8½	130	12 x 28	22	15 x 40	12	20 x 36	10	26 x 32	9	32 x 38	6
7 x 9	115	12 x 30	20	16 x 16	28	20 x 38	10	26 x 34	8	32 x 40	6
8 x 10	90	12 x 32	19	16 x 18	25	20 x 40	9	26 x 36	8	32 x 42	6
8½ x 10½	81	12 x 34	18	16 x 20	23	20 x 42	9	26 x 38	7	32 x 44	5
8 x 11	82	12 x 36	17	16 x 22	21	20 x 44	8	26 x 40	7	32 x 46	5
8 x 12	75	13 x 14	40	16 x 24	19	20 x 46	8	26 x 42	7	32 x 48	5
9 x 11	73	13 x 15	37	16 x 26	17	20 x 48	8	26 x 44	6	32 x 50	5
9 x 13	67	13 x 16	35	16 x 28	16	20 x 50	7	26 x 46	6	32 x 56	4
9 x 12	62	13 x 18	31	16 x 30	15	20 x 54	7	26 x 50	6	32 x 60	4
9 x 14	57	13 x 20	28	16 x 32	14	20 x 58	6	26 x 52	5	32 x 66	3
9 x 15	53	13 x 22	25	16 x 34	13	20 x 64	6	26 x 54	5	34 x 36	6
9 x 16	50	13 x 24	23	16 x 36	13	22 x 24	14	26 x 56	5	34 x 40	6
9 x 18	45	13 x 26	21	16 x 38	12	22 x 26	13	26 x 58	5	34 x 44	5
10 x 12	60	13 x 28	20	16 x 40	11	22 x 28	12	26 x 60	5	34 x 46	5
10 x 13	55	13 x 30	19	16 x 42	11	22 x 30	11	28 x 30	9	34 x 48	5
10 x 14	52	13 x 32	17	16 x 44	10	22 x 32	10	28 x 32	8	34 x 50	4
10 x 15	48	14 x 15	34	16 x 46	10	22 x 34	10	28 x 34	8	31 x 54	4
10 x 16	45	14 x 16	32	16 x 48	9	22 x 36	9	28 x 36	7	34 x 56	4
10 x 17	43	14 x 17	31	16 x 52	9	22 x 38	9	28 x 38	7	34 x 60	4
10 x 18	40	14 x 18	29	16 x 54	8	22 x 40	8	28 x 40	7	34 x 66	3
10 x 20	36	14 x 20	26	16 x 60	8	22 x 42	8	28 x 42	6	36 x 40	5
10 x 22	33	14 x 22	24	18 x 20	20	22 x 44	7	28 x 44	6	36 x 42	5
10 x 24	30	14 x 24	22	18 x 22	18	22 x 48	7	28 x 46	6	36 x 44	5
10 x 26	28	14 x 26	20	18 x 24	17	22 x 50	7	28 x 50	5	36 x 46	4
10 x 28	26	14 x 28	19	18 x 26	16	22 x 52	6	28 x 56	5	36 x 48	4
10 x 30	24	14 x 30	17	18 x 28	14	22 x 56	6	28 x 60	4	36 x 50	4
11 x 12	55	14 x 32	16	18 x 30	14	22 x 60	5	28 x 66	4	36 x 52	4
11 x 13	51	14 x 34	15	18 x 32	13	24 x 24	12	30 x 34	7	36 x 54	4
11 x 14	47	14 x 36	14	18 x 34	12	24 x 26	12	30 x 36	7	36 x 56	4
11 x 15	44	14 x 38	14	18 x 36	11	24 x 28	11	30 x 38	7	36 x 60	3
11 x 16	41	14 x 40	13	18 x 38	11	24 x 30	10	30 x 40	6	36 x 62	3
11 x 17	39	14 x 42	12	18 x 40	10	24 x 32	10	30 x 42	6	36 x 64	3
11 x 18	37	14 x 44	12	18 x 42	10	24 x 34	9	30 x 44	6	36 x 66	3
11 x 20	33	14 x 46	11	18 x 44	9	24 x 36	9	30 x 46	5	36 x 70	3
11 x 22	30	15 x 16	30	18 x 46	9	24 x 38	8	30 x 48	5	38 x 44	4
11 x 24	27	15 x 18	27	18 x 50	8	24 x 40	8	30 x 50	5	38 x 52	4
12 x 13	46	15 x 20	24	18 x 52	8	24 x 42	7	30 x 52	5	40 x 46	4
12 x 14	43	15 x 22	22	18 x 56	7	24 x 46	7	30 x 54	4	40 x 50	4
12 x 15	40	15 x 24	20	18 x 60	7	24 x 48	6	30 x 56	4	40 x 54	3
12 x 16	38	15 x 26	19	20 x 22	16	24 x 50	6	30 x 60	4	40 x 60	3
12 x 17	35	15 x 28	17	20 x 24	15	24 x 54	6	30 x 64	4	40 x 66	3
12 x 18	34	15 x 30	16	20 x 26	14	24 x 56	5	30 x 66	4	40 x 72	3
12 x 20	30	15 x 32	15	20 x 28	13	24 x 60	5	30 x 70	3	44 x 50	3
12 x 22	27	15 x 34	14	20 x 30	12	24 x 66	5	32 x 34	7	41 x 56	3
12 x 24	25	15 x 36	13	20 x 32	11	26 x 28	10				

VALUE OF DEGREES BAUMÉ BY DIFFERENT AUTHORS.

Degrees Baumé.	Delezenne, 12.5°c. Mod.=139.97, before 1848.	Ziuruk, 12.5°c. Mod.=143.64, 1863.	French Codex, Holland, 12.5°c. Mod.=144, 1805.	H. A. Mott, Jr., 17.5°c. Mod.=144, 1877.	Bourguignon, 15°c. Mod.=144.32, 1878.	Morozeau, 12.5°c. Mod.=144.38, 1880.	Custom in France, Mod.=144.38, 1872.	J. Kolb, 15°c. Mod.=144.38, 1872.	H. Pemberton, Mod.=145, 1851.	M. T. G. Chem. Ass'n; U. S. A. H. Elliott, 1877. 15°c. Mod.=145.04.	Schober & Pecher, 15.5°c. Mod.=145.13, 1828.	Iluss, Ed'gh Disp., Mod.=145.40, 1830.	Chemiker Kalender, Berlin. 12.5°c. Mod.=146.98, 1881.	Francoeur, 12.5°c. Mod.=152.05, before 1848.
0	1.0000	1.000	1.000	1.0000	1.0000	1.000	1.000	1.000	1.0000	1.000	1.0000	1.0000	1.000	1.000
1	1.0072	1.007	1.007	1.0070	1.0069	1.008	1.007	1.007	1.0069	1.005	1.0069	1.0070	1.007	1.007
2	1.0145	1.014	1.014	1.0141	1.0140	1.015	1.014	1.014	1.0139	1.011	1.0139	1.0141	1.014	1.013
3	1.0219	1.022	1.022	1.0213	1.0212	1.022	1.022	1.022	1.0211	1.023	1.0211	1.0213	1.020	1.020
4	1.0294	1.029	1.029	1.0286	1.0285	1.029	1.029	1.029	1.0283	1.029	1.0283	1.0286	1.028	1.027
5	1.0370	1.036	1.036	1.0360	1.0358	1.036	1.037	1.037	1.0357	1.036	1.0356	1.0360	1.034	1.034
6	1.0448	1.044	1.044	1.0443	1.0443	1.043	1.045	1.045	1.0431	1.043	1.0431	1.0435	1.041	1.041
7	1.0526	1.052	1.052	1.0511	1.0509	1.051	1.052	1.052	1.0507	1.050	1.0506	1.0511	1.049	1.048
8	1.0606	1.060	1.060	1.0588	1.0586	1.059	1.060	1.060	1.0583	1.057	1.0583	1.0588	1.057	1.056
9	1.0687	1.067	1.067	1.0667	1.0665	1.067	1.067	1.067	1.0661	1.064	1.0661	1.0666	1.064	1.063
10	1.0769	1.075	1.075	1.0746	1.0744	1.075	1.076	1.075	1.0740	1.071	1.0740	1.0745	1.072	1.070
11	1.0853	1.083	1.083	1.0827	1.0825	1.083	1.083	1.083	1.0820	1.086	1.0820	1.0825	1.080	1.078
12	1.0937	1.091	1.091	1.0909	1.0906	1.091	1.090	1.091	1.0902	1.093	1.0901	1.0906	1.088	1.085
13	1.1023	1.100	1.100	1.0992	1.0989	1.099	1.099	1.100	1.0984	1.100	1.0983	1.0988	1.096	1.094
14	1.1111	1.106	1.106	1.1111	1.1074	1.107	1.108	1.108	1.1068	1.107	1.1067	1.1071	1.104	1.101
15	1.1200	1.116	1.116	1.1163	1.1159	1.116	1.114	1.116	1.1153	1.114	1.1152	1.1155	1.113	1.109
16	1.1290	1.125	1.125	1.1250	1.1246	1.125	1.125	1.125	1.1240	1.122	1.1239	1.1240	1.121	1.118
17	1.1382	1.134	1.134	1.1339	1.1335	1.134	1.134	1.134	1.1328	1.136	1.1326	1.1326	1.130	1.126
18	1.1475	1.143	1.143	1.1429	1.1424	1.143	1.141	1.142	1.1417	1.143	1.1415	1.1414	1.138	1.134
19	1.1570	1.152	1.152	1.1520	1.1516	1.152	1.152	1.152	1.1507	1.150	1.1506	1.1504	1.147	1.143
20	1.1666	1.162	1.161	1.1613	1.1608	1.161	1.162	1.162	1.1600	1.158	1.1598	1.1596	1.156	1.152
21	1.1764	1.171	1.171	1.1707	1.1702	1.170	1.170	1.171	1.1693	1.172	1.1691	1.1690	1.166	1.160
22	1.1864	1.180	1.180	1.1803	1.1798	1.180	1.179	1.180	1.1788	1.179	1.1786	1.1785	1.176	1.169
23	1.1965	1.190	1.190	1.1901	1.1895	1.190	1.190	1.190	1.1885	1.186	1.1883	1.1882	1.185	1.178
24	1.2068	1.199	1.199	1.2000	1.1994	1.200	1.200	1.200	1.1983	1.201	1.1981	1.1981	1.195	1.188
25	1.2173	1.210	1.210	1.2101	1.2095	1.210	1.210	1.210	1.2083	1.208	1.2080	1.2082	1.205	1.197
26	1.2280	1.221	1.221	1.2203	1.2197	1.220	1.220	1.220	1.2184	1.216	1.2182	1.2184	1.215	1.206
27	1.2389	1.221	1.221	1.2308	1.2301	1.230	1.231	1.231	1.2288	1.231	1.2285	1.2288	1.225	1.216
28	1.2499	1.242	1.242	1.2414	1.2407	1.241	1.241	1.241	1.2393	1.238	1.2390	1.2394	1.235	1.225
29	1.2612	1.252	1.252	1.2522	1.2514	1.252	1.252	1.252	1.2500	1.254	1.2497	1.2502	1.245	1.235
30	1.2727	1.261	1.261	1.1632	1.2624	1.263	1.260	1.263	1.2608	1.262	1.2605	1.2612	1.256	1.245
31	1.2844	1.275	1.275	1.2743	1.2735	1.274	1.273	1.274	1.2719	1.269	1.2716	1.2724	1.267	1.256
32	1.2962	1.286	1.286	1.2857	1.2849	1.285	1.284	1.285	1.2831	1.285	1.2828	1.2838	1.278	1.267
33	1.3083	1.298	1.298	1.2973	1.2964	1.296	1.296	1.297	1.2946	1.293	1.2943	1.2954	1.289	1.277
34	1.3207	1.309	1.309	1.3091	1.3081	1.308	1.307	1.308	1.3063	1.309	1.3059	1.3072	1.300	1.288
35	1.3333	1.321	1.321	1.3321	1.3301	1.320	1.315	1.320	1.3181	1.317	1.3177	1.3190	1.312	1.299
36	1.3461	1.334	1.334	1.3333	1.3323	1.332	1.329	1.332	1.3302	1.334	1.3298	1.3311	1.324	1.310
37	1.3592	1.346	1.346	1.3458	1.3447	1.345	1.339	1.345	1.3425	1.342	1.3421	1.3434	1.337	1.321
38	1.3725	1.359	1.359	1.3585	1.3574	1.358	1.359	1.357	1.3551	1.359	1.3546	1.3559	1.349	1.333
39	1.3861	1.372	1.372	1.3714	1.3703	1.371	1.372	1.370	1.3679	1.368	1.3674	1.3686	1.361	1.345
40	1.3999	1.384	1.384	1.3846	1.3834	1.384	1.375	1.383	1.3809	1.386	1.3804	1.3815	1.375	1.357
41	1.4141	1.398	1.398	1.3981	1.3968	1.397	1.399	1.397	1.3942	1.395	1.3937	1.3947	1.388	1.369
42	1.4285	1.412	1.412	1.4118	1.4104	1.410	1.413	1.410	1.4077	1.413	1.4072	1.4082	1.401	1.381
43	1.4433	1.426	1.426	1.4267	1.4244	1.424	1.417	1.424	1.4215	1.422	1.4210	1.4219	1.414	1.395
44	1.4583	1.440	1.440	1.4400	1.4386	1.438	1.441	1.438	1.4356	1.441	1.4350	1.4359	1.428	1.407
45	1.4735	1.454	1.454	1.4545	1.4530	1.453	1.445	1.453	1.4500	1.451	1.4493	1.4501	1.442	1.420
46	1.4889	1.470	1.470	1.4694	1.4678	1.468	1.466	1.468	1.4646	1.470	1.4640	1.4645	1.456	1.434
47	1.5053	1.485	1.485	1.4945	1.4829	1.483	1.482	1.483	1.4795	1.480	1.4789	1.4792	1.470	1.448
48	1.5217	1.501	1.501	1.5000	1.4983	1.498	1.500	1.498	1.4949	1.500	1.4941	1.4942	1.485	1.462
49	1.5384	1.516	1.516	1.5158	1.5140	1.514	1.515	1.514	1.5104	1.510	1.5097	1.5096	1.500	1.476
50	1.5555	1.532	1.532	1.5319	1.5301	1.530	1.532	1.530	1.5263	1.531	1.5255	1.5253	1.515	1.490
51	1.5730	1.549	1.549	1.5484	1.5465	1.546	1.540	1.540	1.5425	1.541	1.5417	1.5413	1.531	1.505
52	1.5909	1.566	1.566	1.5902	1.5882	1.588	1.586	1.586	1.5831	1.583	1.5823	1.5824	1.572	1.520
53	1.6092	1.583	1.583	1.5824	1.5802	1.580	1.586	1.580	1.5760	1.573	1.5752	1.5742	1.562	1.535
54	1.6279	1.601	1.601	1.6000	1.5978	1.598	1.603	1.597	1.5934	1.594	1.5925	1.5912	1.578	1.551
55	1.6471	1.618	1.618	1.6179	1.6157	1.616	1.618	1.615	1.6111	1.616	1.6101	1.6086	1.596	1.567
56	1.6667	1.638	1.637	1.6363	1.6340	1.634	1.639	1.634	1.6292	1.627	1.6282	1.6264	1.615	1.583
57	1.6868	1.659	1.656	1.6551	1.6527	1.653	1.660	1.652	1.6477	1.650	1.6467	1.6446	1.634	1.600

NOTE:—Where the modulus was not given, it was calculated by the formula: $n = \frac{P \times d}{P - 1}$ in which n = modulus; P = Specific Gravity; d = Baumé degree. 66 was taken for d whenever the corresponding Sp. Gr. appeared.—By C. F. Chandler and F. G. Wiechmann.

ADULTERATION OF ESSENTIAL OILS.

THE following practical and easily applied directions, requiring neither expensive apparatus or delicate manipulation, by George A. Kelly, of Pittsburg, Pa., are selected because of their simplicity and actual merit :

The simplest manner of testing for the presence of alcohol, is to pour a quantity of the oil into a shallow glass vessel, place in the dark, and touch with a burning match ; if alcohol be present the oil, or, rather, the alcohol, will take fire and burn with the characteristic blue, smokeless flame. The oil proper will not burn until heated to the boiling point, when the flame will be yellow and smoky. Another test for alcohol is to take a graduated tube containing water up to a certain mark, then adding a like quantity of oil; on violently shaking the tube the alcohol will combine with the water, and, after allowing the tube to stand for a time, the oil separating from the water, will fall below the mark as much as there has been alcohol present ; if the oil be a heavy one, this process is inverted. Alcohol in oils of lemon, bergamot, and orange, can be shown instantly by putting into the test tube a crystal of aniline, not soluble in water; the alcohol in the oil will instantly dissolve the crystal and develop the aniline color—which is not the case with pure oil.

Ether can easily be separated by fractional distillation, as its extreme volatility permits it to be driven off before the oil becomes heated. Fixed oils can be determined by leaving a stain on unsized white paper after the essential oil has been evaporated. All essential oils (except Turkish rose) evaporate without leaving this stain. The test of saponification with caustic soda, or potash, will also discover the presence of fixed oils. This test, however, cannot be applied to oil cassia, cloves or wintergreen. The determination of adulterations by means of other and inferior essential oils, presents greater difficulties, requiring in many instances chemical analysis, and always a certain degree of knowledge, gained only by experience. A table should be kept of the specific gravity of every pure essential oil, and the specific gravity of every arrival of oil be found by means of the hydrometer, and any notable variation from the table will indicate some adulteration, although lately this has been circumvented by the addition of chloroform or bisulphide of carbon ; these are, however, easily detected by their peculiar odor when the oil is slightly heated, or by fractional distillation.

Essential oils may be classified into heavy and light, the specific gravity of water being the unit. The heavy oils, when adulterated with the light, can be tested by shaking them with water in a long test tube ; after standing for some time the lighter oil will rise to the top, and can be decanted, and the admixture be detected by the smell or taste. The heavy oils are cassia, generally adulterated with alcohol and fixed oils, oil cloves, with oil cubebs, turpentine, and copaiba (tested with water and also by saponification), sassafras and wintergreen, tested with hydrometer ; this latter is generally adulterated with the cheaper oil sassafras, which can be partially separated by saponifying the wintergreen with a solution of caustic potash. Oil sassafras will not saponify, and can therefore be readily recognized. The most common adulterant is spirit of turpentine, and this can only be detected by its smell, except in oil peppermint. Pure oil peppermint, when brought into contact with resublimed iodine, will cause this to remain inert, or, if freshly distilled, will cause some fumes to arise; but when mixed with turpentine the iodine will fulminate violently.

Every dealer should have specimens of *perfectly* pure oils, which as standards, would enable him to compare the odor and taste of newly purchased oils, which in many cases is the only way to determine either value or purity.

Name of oil.	Adulteration.	How Tested.
Allspice.....	Oil Cloves.....	By comparison with standard.
Almonds.....	Oil Myrbane.....	Dissolve a single drop in 2 oz. of alcohol. The solution will have a decidedly bitter almond taste; the adulterated a sweetish, faint taste.
Amber.....	Coal Oils and Turpentine.....	By comparing with smell of pure.
Bay.....	Pimento and Cloves.....	By comparing solutions of pure oil.
Bergamot.....	Orange, when that oil is cheaper; also Alcohol.....	By comparison. Bergamot has a decidedly bitter taste; less so when mixed with orange.
Cajeput.....	Spirit Turpentine.....	By comparison.
Caraway Seed.....	With oil from the chaff.....	By comparison.
Cedar.....	Spirit Turpentine.....	By comparison.
Ceylon Cinnamon.....	Cassia.....	By comparing taste.
Citronella.....	Turpentine, and lately with Cocoa-nut Oil.....	Place in a test tube; put in a freezing mixture. Cocoa Oil will congeal.
Cubebs.....	Copaiba.....	By comparison and specific gravity.
Geranium Rose.....	Palmrosa, or inferior grades.....	By comparison.
Hemlock.....	Spirit Turpentine.....	By comparison.
Jnniper Berries.....	Spirit Turpentine.....	By comparison.
Lemon.....	Alcohol, Turpentine and Castor Oil.....	By comparison.
Lavender.....	With Turpentine and inferior grades of Oils.....	By comparison.
Mace.....	Nutmegs.....	By comparison.
Marjoram.....	French Marjolaine is mostly adulterated with Pennyroyal.....	By comparison.
Melissa.....	Lemon Grass.....	By comparison.
Mustard Seed.....	Bi-Sulphide Carbon.....	Chemical analysis.
Neroli.....	Petit Grain.....	By Smell.
Peppermint.....	Pennyroyal, Turpentine and Cubebs.....	By Smell.
Rose.....	Spermaceti, Geranium Rose, Citronella and Cubebs.....	By Smell.
Rosemary.....	Inferior grades and Turpentine.....	By Smell.
Sandal Wood.....	Bal. Copaiba, Oil Copaiba, Oil Cedarwood.....	By Smell.
Spearmint.....	Pennyroyal and Turpentine.....	By Smell.
Spruce.....	Spirit Turpentine.....	By Smell.
Tansy.....	Spirit Turpentine.....	By Smell.
Vetiver.....	Patchouly.....	By Smell.
Verbena.....	Lemon Grass.....	By Smell.
Wormwood.....	Sprit Turpentine.....	By Smell.

The Expansion of Water by Heat.

HERR P. VOLKMANN has compiled the results of Hagen, Matthiessen, Pierre, Kopp and Jolly, on the expansion of water, and has obtained the following mean results for the volume and density of water at various temperatures :

Temp.	Volume.	Density.	Temp.	Volume.
0 degr. C.....	1.000122	0.999878	15 degr. C.....	1.000847
1 ".....	1.000067	0.999933	20 ".....	1.001731
2 ".....	1.000028	0.999972	25 ".....	1.002868
3 ".....	1.000007	0.999993	30 ".....	1.004250
4 ".....	1.000000	1.000000	40 ".....	1.007700
5 ".....	1.000008	0.999992	50 ".....	1.011970
6 ".....	1.000031	0.999969	60 ".....	1.016940
7 ".....	1.000067	0.999933	70 ".....	1.022610
8 ".....	1.000118	0.999882	80 ".....	1.028910
9 ".....	1.000181	0.999819	90 ".....	1.035740
10 ".....	1.000261	0.999739	100 ".....	1.043230

COMPARATIVE STRENGTHS OF PREPARATIONS IN DIFFERENT PHARMACOPŒIAS.

In the subjoined table nearly every Pharmacopœia known to be in use has been consulted, as also the modifications proposed by the United States Pharmacopœia Revision Committee, the formulæ published by the Société de Pharmacie de Paris, and those of all authorized supplements. These tables, showing the necessity for a universal pharmacopœia, will be useful for reference by dispensing druggists when any of these preparations are called for by parties who had used other official preparations than those of the U. S. P.

ABBREVIATIONS.

Aust = Pharmacopœia Austriaca 1869.
Belg = Ph. Belgica 1854.
Belg appx = " Appendix of formulæ magistral, or little used.
Br = Ph. Britanica 1868.
Br add = " Addendum 1874.
Dan = Ph. Danica 1869.
Finl = Ph. Fennica (Finland) 1863.
Fr = French Codex or Ph. Gallica 1866.
Ger = Ph. Germanica 1872.
Gr = Ph. Græca 1868.
Helv. = Ph. Helvetica (Swiss) 1872.
Helv supp = " Supplement 1876.

Holl = Ph. Neerlandica 1871.
Ind = Ph. Indica 1868.
Norw = Ph. Norvegica 1870.
Port = Ph. Portueza 1876.
Paris Soc = Soc. de Pharm. de Paris, Rapport sur les médicaments nouveaux 1877.
Russ = Ph. Rossica 1880.
Span = Ph. Española 1865.
Swed = Ph. Suecica 1869.
U. S. = United States Pharmacopœia 1873.
U. S. rev. = Report on the Revision of U. S. P.
ca = circa
g = gram.

ACIDUM HYDROCYANICUM.

	Per cent. HCN
Norw, Ind (<i>ac. dil.</i>), Helv, U.S., Br, Russ	
(<i>ac. medicinale</i>).....	2.0
Belg.....	2.5
Fr (<i>ac. medicinale</i>), Port (<i>ac. normal</i>)....	10.0
Sp.....	10.5
Gr yields 4 per cent. ferric cyanide	
Absent: Aust, Dan, Finl, Holl, Germ. Swed	
substitutes an emulsion made from amygdalin,	
containing .66 per cent. HCN	

Syrupus.

Sp.....	1 in 116
Belg.....	1 " 125
Fr.....	.05 per cent. HCN

ACONITUM.

Absent: Finl, Holl, Swed

Tinctura Alcoholicæ.

Belg.....	1 dried herbs in 5
Dan, Norw.....	1 " 10
Helv, Port.....	1 dried leaves in 5
Russ.....	1 " 10
U. S. (rev.).....	1 dried root in 2.5
U. S.....	1 " 2.67
Aust, Port.....	1 " 5
Ind, Brit.....	1 " 8
Russ, Germ.....	1 " 10
Belg, Sp, Port, Fr.....	1 fresh herb to 1

Tinctura Æthereæ.

Helv supp.....	1 leaves in 5
Belg.....	1 herb in 5
Gr.....	1 " 6

Syrupus.

Fr.....	1 tinct. of fresh herb in 10
Belg.....	1 alcoholic extr. in 333

Linimentum.

Ind, U. S., U. S. (rev.) Brit.....	1 root in 1
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Emplastrum.

Belg.....	1 extractum in 5
U. S., U. S. (rev.).....	1 root in 1

Aconitinum, Unguentum.

Sp.....	1 in 39
Ind.....	1 " 59
U. S. (rev.).....	1 " 50
Br.....	1 " 60

Aconitinum Solutio.

Sp.....	1 in 140
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ETHER.

Solutioes Alcoholicæ.

	Sp.	Gr.
Sp.....	1 ether in 1.2	—
Port.....	1 " 1.4	—
Fr*.....	—	.76
Fr.....	1 " 2.0	—
Holl.....	1 " 2.0	.78
Belg.....	1 " 2.0	.791-.795
Russ.....	1 " 3.0	.8
Finl.....	1 " 3.0	—
Ind.....	1 " 3.0	.809
Port.....	1 " 4.0	—
Swed, Dan, Norw.....	1 " 4.0	.806-.810
Helv.....	1 " 4.0	.810-.816
Aust.....	1 " 4.0	.820

Absent: Gr

Syrupus.

Port.....	1 ether in 14.08
Helv.....	1 " 50.00
Belg.....	1 " 66.66
Absent: Aust, Dan, Sp, Finl, Gr, Ind, Holl,	
Norw, Russ, Swd, Fr, Br, U. S.	

ETHER NITROSUS.

	Sp.	gr.
U. S. (rev.).....		.835
U. S.....		.837
Dan.....		.838 to .842
Swed, Russ.....		.84
Gr, Germ.....		.840
Ind.....		.845
Helv.....		.845
Belg.....		.85
Finl, Sp.....		not stated
Absent: Port, Norw, Holl, Fr, Aust		

*For making ethereal tinctures.

ÆTHER CHLORICUS.

	Sp. gr.
Gr.....	·835 to ·845
Holl.....	·836 ·840
Norw. Helv., Dan, Germ.....	·838 ·842
Belg.....	·84
Sp.....	not stated

Absent: Finl, Ind, Port, Russ, Swd, Fr, Aust.

AMYGDALÆ AMARÆ.

Aq. Amygdalurum Amarum.

	Per cent. HCN
Finl, Aus.....	·02
Russ, Helv, Belg, Germ.....	·1
Holl.....	·1006
Norw, Dan.....	·139

Product

Swd..... 1 bitter almonds in 0·9

Port,* Gr..... 1 " 1

U. S..... 1 essential oil in 960

Absent: Sp, Ind, Fr, Br

*Also an aqua alcoolisata.

Aq. Amygd. Amar. Diluta.

Aust.....	1 aqua fortior in 12
Dan, Swed, Germ.....	1 " 20
Belg.....	1 " 31·2
Finl.....	1 " 32
Russ.....	1 " 49

Mistura Amygdalina Sp.

HCN..... per centum ·014

ANTIMONIUM TARTARATUM.

Vinum.

Port, Belg.....	1 in 200
Russ, Holl, Ind, Gr, Finl, U.S., Brit, J.....	1 240
Dan.....	1 249
Swed. Norw, Helv, Aust, Germ, U. S. (rev.).....	1 250
Sp.....	1 288
Fr.....	1 300

Unguentum.

Fr, Port, Sp.....	1 in 4
Russ, Norw, Ind, Helv, Aust, Germ, U. S., U. S. (rev.), Brit.....	1 5
Belg.....	1 6·6
Holl.....	1 7
Finl.....	1 9

Emplastrum.

U. S., U. S. (rev.).....	1 in 5·0
Belg.....	1 7·1
Russ.....	1 8·0
Belg appx (sparadrap).....	1 10·0

ARSENICUM.

Liquor Potassæ Arsenitis; Liquor Fowleri.

Aust, Gr, Holl, Germ.....	1 As ₂ O ₃ in 90
Sp.....	1 " 99
Swed, Russ, Port, Norw, Ind, Helv, Dan, Belg, U. S. (rev.), Fr.....	1 " 100
Finl. U. S., Brit.....	1 " 120

Liquor Sodæ Arseniatis; Liquor Pearsoni.

Ind, U. S., Brit.....	1 sodium arseniate in 120
U. S. (rev.).....	1 " 100
Port, Helv supp, Dan.....	1 " 500
Sp.....	1 " 580
Belg appx.....	1 " 600

Liquor Arsenici Hydrochlorici.

Ind, U. S., Brit.....	1 As ₂ O ₃ in 120
U. S. (rev.).....	1 " 100

Pilule Absenicalis, seu Asiaticæ.

	Gram.
Belg appx.....	As ₂ O ₃ in each pill ·004
Fr, Port.....	·005

Pulveres Arsenicalis.

Sp, Belg (p. Cosmi).....	1 As ₂ O ₃ in 8
Germ.....	1 " 4·5
Belg appx (p. ex Rousselot).....	1 " 16·6
Sp.....	1 " 17
Sp (p. Dracontii Co.).....	1 " 4·375

Granules.

Fr..... As₂O₃ in each ·001
Ung. arsenicale Helmundii Germ contains 11·1 per cent. of P. arsen. Cosmi.

ATROPINE.

Liquor Atropiæ.

Port.....	1 sulphate in 100 water or alcohol
Ind, Brit.....	1 " 120 "
Ind, Brit.....	1 alkaloid in 120 "

Glycerinum Atropiæ.

Port..... 1 sulphate in 500

Unguentum Atropiæ.

Ind.....	1 alkaloid in 59·4
U. S. (rev.).....	1 " 50·0
Brit.....	1 " 60·0

Granules.

Fr..... ·001 g. alkaloid in each

BELLADONNA.

Belladonnæ Tinctura.

Fr, Port, Helv supp, Sp, Belg.....	1 dried leaves or herb in 5
Finl.....	1 " " 6
U. S.....	1 " " 8
U. S. (rev.).....	1 " " 7
Russ.....	1 " " 10
Ind, Brit.....	1 " " 20
Fr, Port, Belg.....	1 fresh leaves to 1
Germ.....	1 " 1·2
Aust.....	1 root in 5

Tinctura Ætherea.

Fr, Belg..... 1 dried leaves in 5

Belladonnæ Aqua.

Belg..... 1 herb in 2

Belladonnæ Oleum.

Helv supp.....	1 dried leaves in 5
Belg.....	1 " 8
Port.....	1 " 10
Holl.....	1 " 24
Fr, Sp.....	1 fresh leaves to 2

Belladonnæ Syrupus.

Fr.....	1 tincture in 13·3
Port.....	1 tinct. recent. in 20
Sp.....	1 extract in 403
Helv supp.....	1 " 500

Belladonnæ Unguentum.

Helv.....	1 leaves in 4
Belg.....	1 " 5
Sp.....	1 extract in 5
Brit.....	1 " 6·5
Ind.....	1 " 7
U. S. (ca).....	1 " 8
Fr (cerat), Port (pomada), Germ.....	1 " 10
Russ.....	1 " 11
Port (pomada forte), U. S. (rev.).....	1 alcoholic extract in 10

Belladonnæ Emplastrum.

U. S., U. S. (rev).....	1 root in 1
Helv supp.....	1 leaves in 3
Holl.....	1 " 3·5
Russ.....	1 " 3·6
Germ.....	1 " 4·0
Ind.....	1 extract in 1
Brit.....	1 " 1·166
Fr.....	1 " 1·3
Belg.....	1 " 5
Port.....	1 " 10

Belladonnæ Suppositoria.

Belg appx.....	1 extract in 12·5
U. S. (rev.).....	1 " 60·0

Belladonnæ Glycerinum.

Port..... 1 extract in 10

Belladonnæ Linimentum.

Ind, Brit..... 1 root in

CAMPHORA.

Camphoræ Acetum.

Sp.....	1 camphor in	39·2
Port.....	1 "	50·0
Belg.....	1 "	83·3
Helv supp.....	1 "	100·0
Russ, Finl.....	1 "	240·0
Gr.....	1 "	500·0

Camphoræ Unguentum.

Helv.....	1 camphor in	4
Sp.....	1 "	4·3
Belg appx.....	1 "	4·39
Russ.....	1 "	4·5
Port.....	1 "	5

Camphoræ Oleum.

Swed, Finl, Aust, U. S.....	1 camphor in	4
Norw, Ind, Dan, U. S. (rev.), Brit.....	1 "	5
Sp.....	1 "	7
Gr.....	1 "	9
Fr, Russ, Port, Helv, Belg, Germ.....	1 "	10

Camphoræ Spiritus.

U. S. (rev.).....	1 camphor in	7
U. S.....	1 "	9
Fr, Swed, Port, Norw, Ind, Helv, Germ, Dan, Aust, Brit.....	1 "	10
Gr.....	1 "	12
Russ, Holl, Belg.....	1 "	13
Finl.....	1 "	17
Sp.....	1 "	25
Fr, Belg (<i>debile</i>).....	1 "	40

Spiritus Æthereus.

Belg appx (<i>liquor nervinus</i>).....	1 in	66
Swed, Norw, Finl, Dan.....	1 "	7
Fr, Port.....	1 "	10

Vinum.

Helv supp, Germ.....	1 in	50
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CANNABIS INDICA.

Tinctura.

U. S. (rev.).....	1 herb in	5
Russ.....	1 "	10
U. S. (rev.).....	1 extract in	15
Germ.....	1 "	19
Port, Ind, Brit.....	1 "	20
U. S.....	1 "	21·6
Helv supp.....	1 alcoholic extract in	20

CANTHARIDES.

Cantharidis Tinctura.

Dan (<i>fortior</i>), Belg, Aust.....	1 canth. in	5
Gr.....	1 "	6
Holl.....	1 "	8
Fr, Russ, Port, Helv, Germ.....	1 "	10
Finl.....	1 "	12
Sp.....	1 "	13
U. S. (rev.).....	1 "	25
Swed, Norw, Dan.....	1 "	30
U. S.....	1 "	32
Ind, Brit.....	1 "	80

Tinctura Ætherea.

Belg.....	1 canth. in	5
Fr, Port.....	1 "	10

Cantharidis Oleum.

Belg, Port, Fr.....	1 canth. in	10
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Cantharidis Unguentum.

Finl (<i>colatum</i>), U. S.....	1 canth. in	3
U. S. (<i>ceratum extracti canth.</i>).....	1 "	3·2
U. S. (rev.).....	1 "	3
Sp.....	1 "	3·3
Swed.....	1 "	4
Russ, Norw, Gr.....	1 "	5
Helv, Germ (<i>ca</i>).....	1 "	6
Belg (<i>nigrum</i>).....	1 "	6·6
Holl.....	1 "	7
U. S. (rev.).....	1 "	7·1
Ind, Brit.....	1 "	8
Germ (<i>unguentum acre</i>).....	1 "	8·33
Belg (<i>album</i>).....	1 "	10
U. S.....	1 "	12·8

Dan (<i>simplex</i>).....	1 canth. in	15·5
Port.....	1 "	16·6
Fr (<i>epispast. jaune</i>).....	1 "	17

Unguentum Viride.

Dan.....	1 canth. in	2·7
Finl (<i>ca</i>).....	1 "	3
Fr.....	1 "	33
Belg.....	1 "	33·3

Cantharidis Emplastrum.

Swed.....	1 canth. in	0·875
Aust.....	1 "	2·75
Holl.....	1 "	2·8
Fr, Norw, Ind, Belg, Brit.....	1 "	3·0
Fr.....	1 "	3·24
Sp.....	1 "	3·3
Belg.....	1 "	3·57
Norw, Finl, Dan.....	1 "	3·6
Russ, Belg.....	1 "	3·75
Port, Gr, Germ.....	1 "	4
Helv.....	1 "	5
Brit (<i>charta epispast.</i>).....	1 "	8·5
Fr.....	1 "	16
Ind, Brit.....	1 "	25

*Emplastrum Perpetuum, seu Janini.**Canth. Euphorb.*

Gr.....	1	125	in 4
Aust.....	1	5	5
Swed.....	1	50	7
Norw, Helv, Finl, Dan.....	1	5	7·5
Russ.....	1	426	7·7
Belg.....	1	5	7·9
Germ.....	1	33	11 44

[Emp. mezerei cantharidatum Germ contains 1 in 3·33.]

Cantharidis Æther.

Helv supp (<i>æth. cantharid.</i>).....	1 canth. in	1
Russ.....	1 "	1·75
Ind, Brit (<i>liq. epispast.</i>).....	1 "	2·5

Cantharidis Acetum.

Port (<i>acetum co.</i>).....	1 in	5·5
Ind, Brit.....	1	10

Cantharidis Collodium.

Port.....	1 in	1·05
Dan, Belg appx (<i>ca</i>).....	1	1·1
Helv.....	1	1·111
Norw.....	1	1·25
Germ.....	1	1·66
Holl, Germ, U. S. (rev.), Russ.....	1	2·0

Linimentum.

U. S.....	1 in	8
U. S. (rev.).....	1	6

CAPSICI TINCTURA.

Belg.....	1 in	5
Gr.....	1	6
Russ, Helv supp, Germ.....	1	10
U. S. (rev.).....	1	25
Ind.....	1	26·66
Brit.....	1	27·0
U. S.....	1	32

CARBOLIC ACID, PHENOL.

Glycerinum.

Ind.....	1 in	5
Brit.....	1	4½
Port.....	1	100

Acetum.

Helv supp.....	1 in	24
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Emplastrum.

Helv supp.....	1 in	16
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Oleum.

Helv supp.....	1 in	10
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Unguentum.

Helv supp.....	1 in	100
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CHINOIDIN.

Tinctura.

Russ.....	1 in	8
Swed, Germ.....	1	9
Norw.....	1	10
Dan.....	1	18

CHLORAL HYDRATIS.

Syrupus.

Brit appx.....	1 in 6
Helv supp.....	1 10
Paris Soc.....	1 20
Port.....	1 50

CHLOROFORM.

Linimentum.

Ind, Brit.....	1 in 2
U. S., U. S. (rev.).....	1 2-33
Helv supp.....	1 5
Fr.....	1 10

Unguentum.

Fr.....	1 in 6
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Spiritus.

U. S. (rev.).....	1 in 10
Ind, Brit.....	1 20
U. S.....	1 13

Tinctura Composito.

Ind, Brit.....	1 in 10
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Aqua.

Brit. appx.....	5 per cent.
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CINCHONA, CORTEX CHINA.

Cinchonæ Tinctura Composita.

Russ, Holl, Sp.....	1 in 8
Germ.....	1 8-3
Norw.....	1 8-75
Dan.....	1 8-80
Swed (ca).....	1 9
Port, Ind, Helv, Belg, U. S., U. S. (rev.), Brit.....	1 10
Gr.....	1 12

Cinchonæ Tinctura.

Fr, Swed, Russ, Norw, Ind, Helv, Sp, Brit, U. S. (rev), Germ, Dan, Belg.....	1 in 5
U. S.....	1 5-3
Gr.....	1 6
Port, Holl.....	1 8

Cinchonæ Vinum.

Fr. (vin. co.), Port.....	1 in 10
Russ.....	1 16-6
Russ (vin. c. cacao tin.).....	1 18-3
Port, Germ.....	1 20
Port.....	1 25
Fr, Belv.....	1 35-3

CODEINE.

Syrup.

Fr.....	1 in 500
Helv supp.....	1 503
Sp.....	1 1,160

COLCHICUM.

Colchici Tinctura.

Port, Sp, Belg.....	1 dried corn in 5
Fr (alcoholature).....	1 fresh corn to 1
Port, Holl, Helv, Belg, Aust.....	1 seeds in 5
Gr.....	1 " 6
U. S. (rev.).....	1 " 7
Ind, U. S., Brit.....	1 " 8
Fr, Swed, Russ, Dan, Germ.....	1 " 10
Fr (alcoholature).....	1 fresh flowers to 1

Colchici Vinum.

U. S.....	1 corn in 2-6
Ind, Brit.....	1 " 5
Port.....	1 " 10
Sp.....	1 " 16
Fr.....	1 " 16-6
U. S. (rev.).....	1 fl. ext. in 2-5
Helv, Aust.....	1 seeds in 5
Gr.....	1 " 6
Belg.....	1 " 6-6
U. S.....	1 " 8-0
Russ, Port, Norw, Holl, Finl, Dan, Germ.....	1 " 10
Sp.....	1 " 16
Fr.....	1 " 16-6
U. S. (rev.).....	1 fl. ext. in 7-5

Colchici Acetum.

Gr.....	1 corn in 7
Port.....	1 " 10
Belg.....	1 " 11-8
Holl.....	1 " 13
Sp.....	1 fresh corn in 12
Russ, Port, Germ.....	1 seeds in 10

[Helv supp gives no formula for acetum colchici, although it is used in making oxymel.]

Colchici Oxymel.

Sp.....	1 acetum in 1-25
Holl, Germ.....	1 " 2
Belg (syrupus).....	1 " 2-88
Russ.....	1 " 3
Belg.....	1 " 3-3
Fr.....	1 " 5
Helv supp.....	1 " 7
Gr.....	1 " ?

Colchici Melitum.

Fr.....	1 corn in 9
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COLOCYNTHIDIS.

Tinctura.

Sp, Belg.....	1 in 5
Holl.....	1 " 9-5
Swed, Russ, Helv, Finl, Dan (cum anisi fructu), Germ.....	1 " 10
Absent: Aust, Gr, Ind, Norw, Port, Fr, Br, U. S.	

CONIUM, CICUTA.

Conii Tinctura.

Fr, Helv supp.....	1 dried herb or leaves in 5
U. S. (rev).....	1 " 7
U. S.....	1 " 8
Port, Belg.....	1 fruit in 5
U. S. (rev).....	1 " 7
Ind, Brit.....	1 " 8
Fr, Port.....	1 fresh leaves to 1

Tinctura Ætherea.

Fr.....	1 dried leaves in 5
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Conii Oleum.

Fr, Sp.....	1 fresh leaves in 2
Brit.....	1 dried leaves in 8
Port.....	1 " 10
Holl.....	1 " 24

Conii Emplastrum.

Fr.....	1 leaves or herb in 1-1
Helv supp, Gr, Dan.....	1 " 3
Norw.....	1 " 3-5
Russ.....	1 " 3-6
Germ.....	1 " 4-0
Aust.....	1 " 9-0
Fr.....	1 extract in 1-3
Belg.....	1 " 5
Finl.....	1 " 8-75
Swed.....	1 " 8-9
Port.....	1 " 10

[N. B.—In Sp there are three compound plasters. The simple plaster is made by adding the extract obtained from 66 parts of unclarified juice to 49 parts of excipient. Emp. conii ammoniacatum Germ contains 9 parts of emp. conii in 13.]

Conii Unguentum.

Helv supp.....	1 leaves in 4
Belg.....	1 " 5
Port, Germ.....	1 alcoholic extract in 10
Russ.....	1 extract in 11

Conii Glycerinum.

Port.....	1 extract in 10
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Conii Syrupus.

Belg.....	1 tincture in 40
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CROTONIS OLEUM.

Unguentum.

Port.....	1 in 5
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Tinctura.

Port.....	1 in 25
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Linimentum.

Ind, Br.....	1 in 8
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Collodium.

U. S. (rev.).....	1 in 2
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CUPRI SUBACETAS.

Oxymel.

Port	1 in 5
Sp.	1 5·2
Gr.	1 16
Helv supp	1 17
Belg	1 ?

Ceratum.

Russ, Germ.	1 in 23
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Oleum.

Sp.	13 in 9
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Emplastrum.

Fr.	1 in 8
Belg.	1 22·7

DIGITALIS.—Absent: Nowhere.

Tinctura.

Holl, Gr.	1 dried leaves in 4
Fr, Port, Helv, Sp, Belg,	
Aust.	1 " 5
Finl.	1 " 6
U. S. (rev.)	1 " 7
Ind. U. S., Brit.	1 " 8
Swed, Rus, Nor, Dan*	1 " 10
Fr, Port, Sp, Belg. 1 fresh leaves or herb to 1	
Germ.	1 " 1·2

Tinctura Ætherea.

Fr, Helv supp, Belg.	1 dried leaves in 5
Gr.	1 " 6
Russ, Port, Dan, Germ.	1 " 10

Unguentum.

Helv.	1 leaves in 4
Belg.	1 " 5
Port.	1 alcoholic extract in 10
Russ.	1 extract in 11
Germ.	1 " 10

Syrupus.

Belg.	1 acetum in 2·88
Fr.	1 tincture in 40
Port.	1 tinctura recentis in 50
Helv supp.	1 extract in 500
Belg appx.	1 alcoholic extract in 620
Belg.	1 leaves in 100
Sp.	1 " 148
Fr.	1 digitaline in 10,000

[Solutio iodeti kalici cum digitale Port contains 1 per cent. of the tincture.]

Vinum Digitalis Co.

Port (ca.)	1 leaves in 79
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Emplastrum.

Fr.	1 ext. in 3
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Infusum.

Swed.	1 in 100
Brit.	1 160
Port.	1 200

Acetum.

Holl.	1 in 8·5
Russ, Helv supp, Germ.	1 10·0
Belg.	1 11·8

ERGOTA, SECALE CORNUTUM.

Tinctura.

Ind, Brit.	1 in 4
Port, Holl, Helv supp	1 5
Russ, Germ.	1 10

Infusum.

Ind, Brit.	1 in 40
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Extractum Liquidum.

Ind, Brit.	1 in 1
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Syrupus.

Belg appx.	1 extract in 62·5
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Syrupus Vinosus.

Belg appx.	1 extract in 15·5
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Vinum.

U. S., U. S. (rev.)	1 fl. ext. in 8
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ERGOTINE.

Solutio.

Port.	1 in 10
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* In Norw and Dan there is a tinctura rubra with the same strength of digitalis.

EUPHORBII RESINA.

Tinctura.

Fr, Port.	1 in 5
Gr.	1 6
Russ, Germ.	1 10

Oleum.

Sp.	1 in 12·9
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[See, also, "Emplastrum cantharidis perpetuum." Ung. acre Germ contains 1 euphorbium and 5 of cantharides in 41·5.]

FERRI IODIDI SYRUPUS.

	Percentage of		
	Fe I ₂ produced.	I used.	Fe used.
Belg.	0·3	·247	·2
Port.	—	·2	·4
Fr.	0·5	·2	·425
	0·7	·3	·55
Helv.	1·0	—	—
Finl.	—	4	1·3
Brit.	—	4·64	2·32
Germ, Russ.	5	4	2·0
U. S. (rev.)	9·76	8	2·5
Dan.	10	—	—
Swed, Norw.	10	8·2	3
Aus.	12	—	—
U. S.	—	10	3·2
Holl.	20	16·6	6·6

[Ferrum iodatum saccharatum Germ contains 20 per cent. Fe I₂.]

HELLEBORUS VIRIDIS.—(Not Veratrum Viride.)

Tinctura.

Russ, Germ.	1 in 10
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HELLEBORUS NIGER.

Tinctura.

Port, Belg.	1 root in 5
U. S. (rev.)	1 " 7
U. S.	1 " 8

Pilula.

.....	1 extract in 2·35
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HYDRARGYRI IODIDUM VIRIDE.

Unguentum.

Fr.	1 in 20
Belg.	1 25

Pilula.

Helv supp.	1 in 4
Fr.	·05 g. in each

Syrupus Iodeti Hydrargyri et Iodeti Kalici.

Port.	·04 per cent. with 2 per cent. K. I.
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HYDRARGYRI IODIDUM RUBRUM.

Unguentum.

Belg.	1 in 25
Brit.	1 28
Ind.	1 28·5
U. S.	1 31·0
U. S. (rev.)	1 33·3

HYDRARGYRI NITRAS.

Unguentum.

	Hg	HNO ₃	Total.
Ind.	1	3·0	11·75
U. S.	1·5	3·5	20·0
Swed, Finl, Dan.	1	2·0	12·0
Gr.	1	2·0	14·0
U. S. (rev.)	7	17·0	100·0
Helv supp.	7	14·0	101·0
Belg.	1	1·48	14·5
Brit.	1	3·0	15·5
Sp.	1	1·5	19·0
Sp*	1	2·0	19·0
Fr.	1	2·0	23·0
Port.	1	2·0	25·0

* Oleum oxygenatum ex Bañares.

Solutio.

Belg, Brit.....	1	Hg. in	1·5
Sp.....	1		2·25
Port, U. S., U. S. (rev.).....	1		2·5
Finl.....	1		2·7
Helv supp.....	1		8·0
Russ.....	1		9·0
Finl.....	sp. gr.	1·1	
Gr.....		1·1 to 1·11	
Ind.....		2·246	
[Liq. hydrarg. nitrici oxydulati Germ contains 10 per cent. of the subnitrate.]			

HYDRARGYRI OXIDUM RUBRUM.

Unguentum.

Ind, U. S., Brit.....	1	in	8
Germ, U. S. (rev.).....	1		10
Fr.....	1		16
Sp.....	1		17
Port,* Norw, Helv supp, Dan.....	1		20
Holl.....	1		33
Gr.....	1		49
Russ, Belg.....	1		50

Pomade Desault.

Fr, Sp.....	1	in	12
Belg appx.....	1		12·5

Pomade de Regent.

Fr.....	1	in	20
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HYDRARGYRI PERCHLORIDUM CORROSIVUM.

Aqua Phagedenica, Latio Flava.

Gr.....	1	in	240
Dan.....	1		249
Belg.....	1		250
Ind, Brit.....	1		266
Russ, Helv supp, Germ.....	1		300
Sp.....	1		345
Fr.....	1		400

Solutio Hydrargyri Perchloridi.

Ind Brit.....	1	in	960
Port, Helv supp, Belg appx.....	1		1,000
Sp.....	1		1,152

Pilule (Dupuytren).

Fr.....	1	in 7, with 2 in 7 ext. opii	
Finl.....	1	g. in each	

Collodium Corrosivum.

Holl.....	1	in	16
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Syrupus.

Belg appx.....	0·088	per centum	
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Trochisci.

Sp.....	strength	uncertain	
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Unguentum.

Belg appx.....	1	in	8·9
Sp.....	1		48

CALOMEL HYDRARGYRI SUBCHLORIDUM.

Aqua Phagedenica Nigra, Latio Nigra.

Russ, Helv supp, Germ.....	1	in	60
Ind, Brit.....	1		160
Gr.....	1		240
Dan.....	1		249

Trochisci.

Fr, Sp.....	0·5 g. calomel in each		
Belg appx.....	1	in	40

Pilule Co.

Ind, Brit.....	1	in	5
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Unguentum.

Ind, Brit (ca).....	4	in	6·5
Sp.....	1		9

Pulvis Hydrargyri Gummosus.

Holl.....	1	in	4
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Saccharum Mercuriale.

Sp.....	in	1	6
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HYDRARGYRUM.

Syrupus.

Finl.....	1	in	42
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Unguentum Hydrargyri

Fr, Port, Ind (ca), Gr (ung. hydrarg. <i>Louvierii</i>), Finl, Sp (ung. <i>duplex</i>), Belg, U. S., U. S. (rev.) Brit (ca).....	1	in	2
Aust.....	1		2·5
Russ, Gr, Sp (ung. <i>tertium</i>), Germ.....	1		3
Helv.....	1		3·3
Holl.....	1		3·5
Fr (cerat mercuriel), Sp (ung. <i>digestivum mercuriale</i>), Belg (ung. <i>mitius</i>).....	1		4
Swed.....	1		4·4
Ind (ung. hydrarg. co.), Dan.....	1		4·5
Norw.....	1		5
Sp (ung. <i>simplex</i>).....	1		6
Fr (pommade mercuriel <i>raible</i> and <i>onguent digestif merc.</i>).....	1		8
Absent: Nowhere.			

Emplastrum Hydrargyri.

Ind (ca).....	1	in	3·0
U. S. U. S. (rev.), Brit.....	1		3·66
Finl.....	1		3·75
Gr.....	1		4·0
Holl.....	1		4·54
Russ.....	1		5·9
Swed (ca), Port, Helv, Dan, Brit (empl. <i>hydr. cum ammoniaco</i>).....	1		5·0
Aust.....	1		5·4
Germ.....	1		5·25
Belg.....	1		5·26
Fr.....	1		5·5
Sp.....	1		8·0
Belg appx ?.....	1		10
Absent: Norw.			

Pilule Hydrargyri.

Port, Belg.....	1	in	2·8
Fr, Swed, Ind, Helv supp, U. S., U. S. (rev.), Brit.....	1		3·0
Fr,* Finl, Sp.....	1		4·0
Helv supp ?.....	1		9·0
Belg appx (<i>pil. plenii</i>).....	1		10·0
Absent: Aust, Dan, Gr, Holl, Norw			

Suppositoria.

Ind (ca), Brit.....	1	in	6
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Lindimentum.

Ind (ca), Brit.....	1	in	6
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Saccharum.

Sp ..	1	in	3
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Pulvis Gummosus.

Holl.....	1	in	4
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HYDRARGYRUM AMMONIATUM, SEU PRECIPITATUM ALBUM.

Unguentum.

Ind, Brit.....	1	in	8
Gr.....	1		9
Russ, Port, Helv, Germ, U. S. (rev.).....	1		10
U. S.....	1		13
Holl.....	1		17

HYOSCYAMUS.

Tinctura.

Gr.....	1	dried leaves in	4
Fr, Port, Helv supp, Belg 1	1		5
U. S. (rev.).....	1		7
Ind, U. S., Brit.....	1		8
Russ.....	1		10
Fr, Port, Belg.....	1	fresh leaves to	1
Absent: Aus, Dan, Sp, Holl, Norw, Swed.			

Tinctura Aetherea.

Fr, Belg.....	1	dried leaves in	5
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Oleum.

Fr.....	1	fresh leaves to	2
Sp.....	1	dried leaves in	2
Finl, Aust.....	1		4
Swed, Norw, Helv, Gr,			
Dan.....	1		5
Russ.....	1		6
Belg.....	1		8
Port, Germ.....	1		10
Holl.....	1		24
Absent: Ind.			

* Also a compound ointment containing, in addition, 5 per cent. of lead acetate.

* Pil. merc. purg. and pil. merc. savon.
† Pil. merc. laxant.

Emplastrum.

Helv supp, Gr.	1 leaves in 3
Holl.	1 " 3.5
Russ.	1 " 3.6
Germ.	1 " 4.0
Belg.	1 extract in 5
Finl.	1 " 8.75
Port.	1 " 10

Unguentum.

Helv supp.	1 leaves in 4
Belg.	1 " 5
Germ.	1 extract in 10
Russ.	1 " 11

IDOFORUM.

Oleum.

Port.	1 in 200
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Suppositoria.

U. S. (rev.)	1 in 6
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IODINUM.

Tinctura.

Russ, Port, Helv, Germ, U. S. (rev.)	1 in 10
Fr, Finl, Sp.	1 12.0
Belg.	1 12.5
Aust, U. S. (rev.)	1 16.0
Swed, Gr, Dan	1 20.0
Ind, Brit, U. S. (tr. comp.)	1 40.0

Tinctura Decolor.

Russ, Helv supp, Germ.	1 in 10
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Solutio.

Per Centum.

	I.	K.I.
Swed, Russ, Norw	1	2
Norw	1	—
Port.	3	5
U. S.	4.3	10.6
Ind, Brit.	4.16	6.24
U. S. (rev.)	5.0	10.0
Holl.	8.39	—

Oleum.

Belg.	1 in 100
Port.	1 200
Sp.	1 230

Unguentum.

	I.	K.I.	Total
Helv supp (<i>Rademacheri</i>)	1	1	21
Belg.	1	—	25
U. S. (rev.)	1	25	25
Sp.	1	3	29
Ind.	1	1	29.75
Brit.	1	1	31
U. S.	1	2	34.0
Belg.	1	3	33.3
U. S.	1	2	40.1
Fr.	1	5	46
Port.	1	2	50

Linimentum.

Brit, Ind.	5 K. I. 2 to 41
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Syrupus Iodotannicus.

Port.	1 in 413
Holl.	1 500
Fr.	1 1,000

IPECACUANHA.

Vinum.

Finl.	1 in 8
Swed, Russ, Norw, Dan, Ger.	1 10
Holl.	1 14
Belg.	1 16.6
Port, Ind, Brit.	1 20
U. S., U. S. (rev.)	1 fl. ext. in 16

Tinctura.

Port, Belg, Aust.	1 in 5
Russ, Holl, Helv, Germ.	1 10

Syrupus.

Gr.	1 root in 60
Helv, Germ, Russ.	1 " 100
Holl.	1 tincture in 16
Belg.	1 " 31.5

Fr, Port.	1 alcoholic extract in 100
Sp.	1 " 187
U. S.	1 fluid extract in 16
U. S. (rev.)	1 " 8
U. S. (rev.)	1 " 7.2

Trochisci.

Belg.	1 in 66.6
	In each
Aust, Germ.	.005 g.
Port, Holl, Helv supp.	.01 g.
Russ.	.013 gram $\frac{1}{5}$ grain
Dan.	.015 g.
Sp.	.025 g.
Ind, U. S., U. S. (rev.), Brit.	$\frac{1}{2}$ g.
Gr.	.1 g.

*Pulvis Doveri.*Ipecacuanha
and Opium

	of Each
	1 part in 8
Russ, Swed.	
Port, Norw, Holl, Ind, Helv, Gr,	
Finl, Dan, Brit, U. S. (rev.), U.	
S. Ger.	1 " 10
Fr (<i>ext. opii</i>)	1 " 11
Belg	1 " 11.1
Sp	1 " 12

JABORANDI.

Tinctura.

Russ, U. S. (rev.)	1 in 5
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LAUROCERASUS.

Aqua Laurocerasi.

	Per Cent.	Leaves
	HCN	1 part in
Aust.	.06	—
Sp.	.086	1
Germ.	.1	0.83
Helv.	.1	1
Belg.	.5	1.25
Ind, Brit.	—	1.25
Fr.	.5	1.5
Gr*	—	1.5
Holl.	.839	—
Port†	—	2

Syrupus.

Belg.	1 aqua in 2.88
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Aqua Cerasorum.

Helv.	1 aqua laurocerasi 1 in 20
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LOBELIA INFLATA.

Tinctura.

Fr, Port, Helv supp, Belg, Aust, U. S.	
(rev.)	1 in 5
Holl, Ind, U. S., Brit.	1 8
Swed, Russ, Norw, Dan, Germ.	1 10

Tinctura Aetherea.

Belg.	1 in 5
Ind, Brit.	1 8

Acetum.

U. S.	1 in 8
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MEZEREUM.

[N. B.—In Sp. and Port. *Daphne guidium* takes the place of *D. mezereum*.]

Unguentum.

Belg.	1 bark in 2.5
Helv supp.	1 " 4.0
Sp.	1 " 5.0
Russ, Germ.	1 extract in 10
Dutch.	1 alcoholic extract in 8
Port.	1 10
Belg.	1 ethereal extract in 20.8
Fr.	1 23.5
U. S.	1 fluid extract in 5
U. S. (rev.)	1 " 5.55

* Four oz. should yield 5 grains of ferric cyanide.

† Agua de loureiro ccrejeira.

Emplastrum.
Fr..... 1 ethereal extract in 25·6
[Emp. mezerei cantharidatum Germ 1 in 10,
with 3·3 of cantharides.]

MORPHINUM.—MORPHIÆ ACETAS.

Syrupus.
Helv supp..... 1 in 1,000
Sp..... 1 1,160
Belg, Port..... 1 2,000

Solutio.
Ind..... 1 in 120
Brit..... 1 123

Trochisci.
Germ..... '005 g. in each

MORPHIÆ HYDROCHLORAS.

Syrupus.
Sp..... 1 in 1,160
Fr, Belg..... 1 2,000

Solutio.
Port..... 1 in 20
Finl..... 1 30
Ind..... 1 120
Brit..... 1 123

Pilule.
Fr..... '01 g. in each

Trochisci.
Ind, Brit..... $\frac{1}{32}$ grain in each

Suppositoria.
Brit, Ind..... $\frac{1}{2}$ grain in each

Oleum.
Helv supp..... 1 in 1,000

Infectio Hypodermica.
Brit appx..... 1 in 12

MORPHIÆ SULPHAS.

Syrupus.
Sp..... 1 in 1,160
Fr, Port, Belg..... 1 2,000

Tinctura.
Port..... 1 in 100

Liquor.
U. S..... 1 in 480
U. S. (rev.)..... 1 500

Suppositoria.
U. S., U. S. (rev.)..... 1 in 60

Trochisci cum Ipecac.
U. S., U. S. (rev.)..... $\frac{1}{40}$ grain in each

Pulv. Co.
U. S. (rev.)..... 1 in 61

NICOTIANUM, SEU TABACUM.

Infusum.
Port..... 1 in 200

Oleum.
Port..... 1 in 10

Enema.
Finl..... 1 in 65
Ind, Brit..... 1 192

NARCEINE.

Syrup.
Fr..... 1 in 1,000

NUX VOMICA, STRYCHNUS.

Tinctura.
U. S..... 1 in 4
Fr, Port, Sp, Belg, Aust, U. S. (rev.).. 1 5
Holl, Finl..... 1 6
Swed, Russ, Norw, Ind, Helv, Dan,
Germ, Brit..... 1 10
U. S. (rev.) (alt.)..... 2 per cent. of dry extract

Tinctura Ætherea.
Russ, Germ..... 1 in 10

Tinctura Rademacheri.
Russ..... 1 in 4·8
Helv supp..... 1 6·0

Aqua Strychni Rademacheri.
Belg appx..... 1 in 1·33
Russ..... 1 2·43
Helv supp..... 1 3·6

Infusum Nucis Vomice.
Ind..... 1 in 48

OPIUM.

Opii Acetum.
Swed..... 1 extract in 10
Cf. "Guttæ nigre."

Aqua.
Helv supp..... 1 in 5
Gr..... 1 6
Russ..... 1 10

Confectio.

U. S. (rev.)..... 1 in 36
U. S..... 1 37·55
Ind, Brit..... 1 40

Emplastrum.

Ind, Finl, Brit..... 1 powder in 10
Holl..... 1 " 13·25
Helv..... 1 " 15·0
Belg^s..... 1 " 20·0
Germ..... 1 " 21·5
Port..... 1 extract in 10·0
U. S., U. S. (rev.)..... 1 " 16·0

Enema.

Ind, Brit..... 1 tincture in 33
Finl..... 1 " 34
Swed..... 1 " 65

Extractum Liquidum.

Ind, Brit..... 1 extract in 20

Glycerinum.

Port..... 1 extract in 10

Sydenham's Laudanum.

Fr..... 1 in 10

Guttæ Nigræ.

(Tinct. opii acetosa Helv supp, Acetum opii
aromat. Belg appx), cf. "Acetum opii."
Fr, Helv supp..... 1 in 2
Belg appx..... 1 6·25
U. S..... 1 6·40
U. S. (rev.)..... 1 6·66

Laudanum Rousseau's.

Fr, Belg..... 1 in 4

Laudanum, Sydenham's.

Holl, Gr..... 1 opium in 6
Fr..... 1 " 8
Russ..... 1 " 9½
Swed, Norw, Sp, Dan, Aust,
Germ..... 1 " 10
Belg..... 1 " 14·9
Helv..... 1 " 16·0
Finl..... 1 " 42·0
Port..... 1 extract in 20

Linimentum.

Brit..... 1 tincture in 2

Pilule.

U. S..... 1 opium in 1·25
Norw[†]..... 1 " 7½
Brit (pil. saponis co.)..... 1 " 6
Belg (ca)..... 1 extract in 8
Port..... 1 " 10
Germ (pil. odontalg)..... 1 " 24

Pulvis Composita.

Ind, Brit..... 1 in 10

Syrupus.

Holl..... 1 wine in 48
Finl..... 1 tincture in 49
Swed, Norw..... 1 " 100
Sp..... 1 extract in 403
Gr..... 1 " 480
Fr, Russ, Port, Helv, Belg..... 1 " 500
Germ..... 1 " 1,000

Suppositoria.

U. S..... 1 extract in 30

* Emp. opii aromat. has the same strength.
† Pil. de cynoglossio.

<i>Tinctura (tr. thebaica).</i>		
Gr.....	1 dried opium in 6	
Russ, Helv.....	1 " "	9.5
Swed, Norw, Finl, Dan,		
Aust, U. S. (rev.), Germ	1 " "	10.0
Ind (ca), Sp.....	1 " "	12.0
U. S.....	1 " "	12.8
Brit.....	1 " "	13.3
Belg.....	1 extract in 11.9	
Fr.....	1 " "	12.0
Port.....	1 " "	20.0

<i>Tinctura Acetata.</i>		
U. S.....	1 in 10	
U. S. (rev.) omitted.		

<i>Tinctura Ammoniata.</i>		
Ind, Brit.....	1 in 96	
Russ.....	1 96	

<i>Tinctura Opii Camphorata (tr. thebaica, seu opii benzoica).</i>		
U. S. (ca).....	1 opium in 90	
Russ.....	1 " "	194
Swed, Norw, Helv supp, Belg,		
Germ, U. S. (rev.).....	1 " "	200
Ind, Gr, Brit.....	1 " "	240
U. S. (rev).....	1 " "	250
Dan.....	1 " "	300
Fr, Port.....	1 extract in 200	

<i>Tinctura Deodorata.</i>		
U. S. (rev.) .	1 in 10	
U. S.....	1 12.8	

<i>Trochisci.</i>		
Ind, Brit....	$\frac{1}{10}$ grain extract in each.	
U. S.....	$\frac{1}{20}$ grain " "	

<i>Pasta Lichenis Opiata.</i>		
Sp.....	1 extract in 1,152	

<i>Unguentum.</i>		
Belg.....	1 powder in 25	
Port.....	1 extract in 10	
Russ, Helv supp, Germ.....	1 " 20	
Fr.....	1 " 100	

<i>Sydenham's Laudanum.</i>		
Fr.....	1 in 10	

<i>Vinum.</i>		
U. S., U. S. (rev.).....	1 in 8	
Swed, Norw, Holl, Dan, U. S.		
(rev.) (alt).....	1 powder in 10	
Swed*.....	1 " 50	
Belg.....	1 extract in 11.9	
Port, Ind, Brit.....	1 " 20	
[Electuarium theriaca Germ contains 1 per cent. of opium.]		

<i>PAPAVER ALBUM.</i>		
<i>Syrupus.</i>		
Br (ca).....	1 capsules in 2.25	
Ind (ca).....	1 " 3	
Holl.....	1 " 7	
Russ.....	1 " 13	
Germ.....	1 " 13.3	
Port.....	1 " 13.5	
Holl.....	1 " 14	
Gr.....	1 " 15	
Aust.....	1 " 15.9	
Belg.....	1 alcoholic extract in 100	
Sp.....	1 " 104	
Fr.....	1 extract opii in 2,000	

<i>PEPSINUM.</i>		
<i>Vinum.</i>		
Russ.....	6 pepsin. saccharat. to 283	
Germ.....	1 mucus to 11.05	

<i>PHELLANDRIUM AQUATICUM.</i>		
<i>Syrupus.</i>		
Port.....	1 fruits in 50	

<i>PHOSPHORUS.</i>		
<i>Electuarium.</i>		
Helv supp....	1 in 52	

* Vin. Glycyrrhizæ opiatum.

<i>Oleum.</i>		
Sp.....	1 in 36	
Gr.....	1 48	
Fr, Belg.....	1 50	
Helv supp, Germ....	1 80	
Russ, Port.....	1 100	
Brit appx.....	1 135	

<i>Æther.</i>		
Helv supp.....	1 in 60	
Russ.....	1 72	
Gr.....	1 480	

<i>Unguentum.</i>		
Port.....	1 in 50	
Sp.....	1 53	
Fr.....	1 100	

<i>Pilula.</i>		
Brit appx.....	1 in 100	

<i>PHYSOSTIGMA.</i>		
<i>Tinctura.</i>		
Paris Soc.....	1 in 5	
Dan.....	1 10	

<i>PLUMBI SUBACETAS.</i>			
<i>Liquor.</i>			
<i>Acetate. Oxide. Water.</i>			
Sp.....	3	1	7
Fr.....	3	1	8
Gr.....	3	1	9
Russ, Helv, Germ.....	3	1	10
Belg.....	2	1	7
Holl.....	16	9	62
U. S.....	16	9.5	64
Brit.....	5	3 $\frac{1}{2}$	20
Norw.....	10	3	46
Finl.....	10	3	48
Ind gives no formula.			

<i>QUINLE SULPHAS.</i>		
<i>Tinctura.</i>		
Ind, Brit.....	1 in 60	
Port.....	1 100	

<i>Tinctura Ammoniata.</i>		
Brit appx.....	1 in 60	

<i>Vinum.</i>		
Ind....	1 in 60	
Port.....	1 200	
Brit.....	1 480	

<i>Syrupus.</i>		
Belg,* Fr.....	1 in 200	
Sp.....	1 290	

<i>Pilule.</i>		
Ind, U. S., Brit....	1 in 1.33	
U. S.....	1 1.59	
Fr.....	1 g. in ea.	

<i>RHUS.</i>		
<i>Rhus Radicans. Alcoolatura.</i>		
Fr.....	1 fresh leaves to 1	
<i>Rhus Toxicodendron. Tinctura.</i>		
Helv supp.....	1 dried leaves in 5	
Russ.....	1 " 10	
Germ.....	1 fresh leaves to 1.2	

<i>SABADILLO.</i>		
<i>Tinctura.</i>		
Helv supp.....	1 in 10	
<i>Unguentum.</i>		
Aust.....	1 in 5	

<i>SABINA.</i>		
<i>Unguentum.</i>		
Gr.....	1 fresh herb in 2	
Port, Belg.....	1 " 2.5	
Ind, Brit.....	1 " 1.375	
Swed, Dan.....	1 " 3.75	
Holl.....	1 " 5.0	
Germ.....	1 extract in 10	
Russ.....	1 " 11	
U. S.....	1 fl. extract in 5	

* Belg has syrups of the citrate and hydrochlorate made by the same formula.

<i>Tinctura.</i>	
Ind, Brit.....	1 in 8
Russ.....	1 10
SANTONINE.	
<i>Syrupus.</i>	
Belg.....	1 in 666
<i>Trochisci.</i>	
Belg.....	1 in 40
Fr, Port.....	in each '01 g.
Germ.....	" '025
Swed, Russ, Norw, Dan..	" '03
Helv.....	" '033
Aust, Germ ..	" '05
Holl.....	" '065
U. S.....	½ grain in each.
SCILLÆ BULBUS.	
<i>Acetum.</i>	
Holl, Gr	1 in 7
Ind, U. S., Brit (ca.)....	1 8
Swed, Russ, Port, Norw, Helv, Dan,	
Aust, Germ.....	1 10
Belg.....	1 11·8
Fr, Sp (fresh bulb).....	1 12·0
<i>Mellitum.</i>	
Fr	1 in 9
Belg.....	?
<i>Oxymel.</i>	
Sp	1 acetum in 1·25
Holl, Germ.....	1 " 2·0
Swed, Russ, Dan..	1 " 3·0
Belg.....	1 " 3·3
Fr.....	1 " 5
Ind, Gr, Aust, Brit....	Uncertain.
<i>Syrupus.</i>	
Russ	1 bulb in 30
Swd.....	1 " 49
Finl.....	1 " 60
U. S. (rev.).....	1 acetum in 1
U. S.....	1 " 2·2
Belg.....	1 " 2·83
Brit.....	1 " 3·0
<i>Tinctura.</i>	
Russ, Port, Helv supp, Sp, Belg,	
Germ.....	1 in 5
U. S. (rev.).....	1 7
Ind, U. S., Brit	1 8
<i>Tinctura Composita.</i>	
Swed.....	1 5
Helv supp.....	1 60
<i>Tinctura Kalina.</i>	
Helv supp.....	1 5
Gr.....	1 6
Russ.....	1 6·25
Germ.....	1 6·31
STRAMONIUM.	
<i>Tinctura Ætherea.</i>	
Belg.....	1 leaves in 5

<i>Tinctura.</i>	
[Ind has a tincture 1 in 8 made from <i>Datura alba</i> .]	
Port, Belg.....	1 fresh leaves to 1
Fr, Port, Belg.....	1 dried leaves in 5
Port, Helv.....	1 seeds in 5
Gr.....	1 " 6
Ind, U. S., Brit	1 " 8
Swed, Russ, Dan, Germ, U. S.	
(rev.).....	1 " 10
<i>Oleum.</i>	
Fr, Sp*.....	1 fresh leaves in 2
Belg.....	1 dried leaves in 8
<i>Emplastrum.</i>	
Fr.....	1 extract in 1·3
Ind (<i>D. alba</i>).....	1 " 2·0
Belg.....	1 " 5·0
<i>Unguentum.</i>	
Belg	1 dried leaves in 5
U. S.....	1 extract in 8
U. S. (rev.).....	1 " 10
STRYCHNINE.	
<i>Tincture.</i>	
Port	1 in 100
Belg.....	1 200
<i>Solution.</i>	
Ind, Brit.....	1 120
<i>Syrup. Strychn. Sulphas.</i>	
Fr.....	" 025 per centum
<i>Granules.</i>	
Fr.....	" 001 g. in each
VERATRINUM.	
<i>Unguentum.</i>	
U. S., U. S. (rev.).....	1 in 25
Ind	1 49·4
Port	1 50·0
Brit.....	1 60·0
Russ.....	1 90
Belg.....	1 100
<i>Solutio.</i>	
Port.....	1 100
<i>Tinctura.</i>	
Brit.....	1 200
VERATRUM ALBUM.	
<i>Tinctura.</i>	
Fr, Helv supp, Aust.....	1 in 5
Russ.....	1 10
<i>Unguentum.</i>	
Dan.....	1 20·83
VERATRUM VIRIDE.	
<i>Tinctura.</i>	
U. S.....	1 in 2
Ind, Brit.....	1 5
[U. S. (rev.) replaced by fl. ext.]	

* Sp. also contains a compound oil.

The Population of the Globe.

ACCORDING to MM. Behm and Wagner's *Bevölkerung der Erde*, Europe has now a population of 315,929,000 inhabitants; Asia, 834,707,000; Africa, 205,479,000; America, 95,405,000; Australia and Polynesia, 431,000; the Polar regions, 82,000; giving a total of 1,455,923,000; being an increase of 16,778,000, according to the latest known censuses. At the end of 1877 Germany had a population of 43,943,000; Austria and Hungary (1879), 38,000,000; France (1876), 36,900,000; Turkey in Europe, 8,860,000; Russia, 87,900,000. In Asia, China possesses 434,900,000 inhabitants; Hong Kong, 130,144; Japan, 34,300,000, according to the census of 1878. The British possessions in India number 240,200,000 people (the census of this year shows 252,640,000); the French possessions, 280,000; Cochin China, 1,600,000; the East Indian Islands, 34,800,000; the islands of the South Sea, 878,000. The area of Africa is estimated at 23,383,000 square kilometers, divided as follows: Forests and cultivated land, 6,300,000; savannahs, 6,235,000; steppes, 4,200,000; deserts, 10,600,000. The inhabitants of British North America number 3,800,000, of the United States 50,000,000, of Mexico 9,485,000, and of Brazil 11,100,000. The Polar regions extend round the Arctic Circle, with an area of 3,859,000 square kilometers, and the Antarctic regions about 600,000. The population of the former is small, with the exception of Iceland, which has 72,000 and Greenland 10,000.

THE METRIC SYSTEM.

THE Metric System of weights and measures has been legalized in nearly all commercial countries, and its use has become general in scientific calculations. The name is derived from *Meter*, the unit of length, the divisions of which form the units of surface, *ar*; capacity, *liter*; solidity, *ster*; and weight, *gram*, with their prefixes.

The Latin derivatives, *deci* (tenth of), *centi* (hundredth of), *milli* (thousandth of), are prefixed to the expression of the unit for its divisions, and the Greek derivatives, *deka* (ten), *hekto* (one-hundred), *kilo* (one-thousand), *myria* (ten-thousand), are prefixed for the multiples of the unit.

The **LITER**, the unit of capacity, both for liquid and dry measure, is represented by the cubic decimeter, or 61·02705 cubic inches, equal to 1·0567 United States quarts, = 0·8802 English quart.

The U. S. gallon has 231, and the English 277·274 cubic inches; the U. S. bushel contains 2150·42, and the English 2218·392 cubic inches. As the United States and Gt. Britain differ materially in their measures of capacity, the relative equivalents of the bushel and gallon are here noted.

Myrialiter of	10,000 liters,	=	2641·7502	U. S. gallons,	=	2200·5102 Eng.
Kiloliter of	1,000 "	=	264·1750	" "	=	220·0510 "
Hektoliter of	100 "	=	26·4175	" "	=	22·0051 "
Dekaliter of	10 "	=	2·6417	" "	=	2·2005 "
LITER of	1 liter,	=	1·0567	" quarts	=	0·8804 "
Deciliter of one-tenth	"	=	0·1056	" quart	=	0·0880 "
Centiliter of 1-hund'th	"	=	0·0211	" pint	=	0·0176 "
Milliliter of 1-thous'th	"	=	0·0084	" gill	=	0·0071 "

In dry-measure, the equivalents are :

Myrialiter equals	283·7824	U. S. Bushels,	=	275·1212	English bushels.
Kiloliter "	28·3782	" "	=	27·5121	" "
Hectoliter "	2·8378	" "	=	2·7512	" "
Dekaliter "	1·1348	" pecks,	=	1·1004	" pecks.
LITER "	0·9081	" quart,	=	0·8803	" quart.
Deciliter "	0·0908	" "	=	0·0880	" "
Centiliter "	0·0181	" pint,	=	0·0176	" pint.
Milliliter "	0·0018	" "	=	0·0017	" "

Dry Measure.

Bushel	2150·42	cub. inches	is	35·237121	liters.
Quarter 8 Eng. bushels,			is	2·907756	hekto.
Peck	537·60	cub. inches	is	8·809283	liters.
Quart	67·20	"	is	1·101161	"
Pint	33·60	"	is	0·550580	liter.
Gill	8·40	"	is	1·376451	decil's.
One cord equals	3·624360	sters,	or cu. meters.		
Cubic yard	"	0·764513	cubic meter.		

Liquid Measure.

Gallon,	231·000	cub. inches	is	3·785206	liters.
Quart,	57·750	"	is	0·946301	liter.
Pint,	28·875	"	is	0·473151	"
Gill,	7·219	"	is	1·182877	deciliters.
Fluid-ounce,		equals		29·571929	cu centim.
Fluid-drachm,		equals		3·696491	"
Cubic inch equals				16·386176	cub. centimeters.
Cubic foot				28·315312	cub. decimeters.

The **GRAM**, the unit of weight, represents the weight of one cubic centimeter of distilled water at its maximum density, — 15·43234874 grains.

Millier (tonne)	1,000,000 grams,	=	2679·227 Troy,	=	2204·6212 avoiz. lbs.
Quintal	100,000 "	=	267·923 "	=	220·4621 " "
Myriagram	10,000 "	=	26·792 "	=	22·0462 " "
Kilogram (kilo)	1,000 "	=	2·679 "	=	2·2046 " "
Hektoqram	100 "	=	3·215 "	=	3·5274 " oz.
Dekagram	10 "	=	0·321 "	=	0·3527 " "
GRAM	1 gram,	=	0·643pen'yt	=	15·4323 grains.
Decigram, one-tenth	"	=	0·064 "	=	1·5432 "
Centigram, one-hund'th	"	=	0·005dr. av.	=	0·1543 grain.
Milligram, one-thous'th	"	=	"	=	0·0154 " "

One ton,	2240 lbs. equals	1·016047 tonnes.
One ton,	2000 lbs. "	0·907195 tonne.
One cwt.	112 lbs. "	50·802528 kilograms.
One hundred lbs.	"	45·359262 kilograms.
One pound avoiz.	"	0·453594 kilogram.
One ounce avoiz.	"	28·349541 grams.

One pound Troy,	equals	0·373242 kilogram.
One ounce	"	31·103496 grams.
One drachm	"	3·887937 grams.
One grain	"	64·79895 centigrams.
One scruple	"	1·295981 grams.
One minim	"	0·061608 cu. centim.

[The above tables are largely extended for scientific calculations where great accuracy is required. In general commercial transactions, one or two decimals will be found sufficient. Vulgar fractions should be avoided, as they are inimical to the genius of this system, which is based entirely on decimal progression.]

FOR CONVERTING KILOGRAMS INTO TROY OUNCES.

Kilograms.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.
0	0	32.15	64.30	96.45	128.60	160.75	192.90	225.05	257.20	289.35
10	321.50	353.65	385.81	417.96	450.11	482.26	514.41	546.56	578.71	610.86
20	643.01	675.16	707.31	739.46	771.61	803.76	835.91	868.06	900.21	932.36
30	964.51	996.66	1028.81	1060.96	1093.11	1125.26	1157.42	1189.57	1221.72	1253.87
40	1286.02	1308.17	1350.32	1382.47	1414.62	1446.77	1478.92	1511.07	1543.22	1575.37
50	1607.52	1639.67	1671.82	1703.97	1736.12	1768.27	1800.42	1832.57	1864.72	1896.87
60	1929.03	1961.18	1993.33	2025.48	2057.63	2089.78	2121.93	2154.08	2186.23	2218.38
70	2250.53	2282.68	2314.83	2346.98	2379.13	2411.28	2443.43	2475.58	2507.73	2539.88
80	2572.03	2604.18	2636.33	2668.48	2700.63	2732.79	2764.94	2797.09	2829.24	2861.39
90	2893.54	2925.69	2957.84	2989.99	3022.14	3054.29	3086.44	3118.59	3150.74	3182.89

FOR CONVERTING AVOIRDUPOIS POUNDS AND OUNCES INTO GRAMS.

Avoir.	0.	1 oz.	2 oz.	3 oz.	4 oz.	5 oz.	6 oz.	7 oz.	8 oz.	9 oz.	10 oz.	11 oz.	12 oz.	13 oz.	14 oz.	15 oz.
0	0	28	57	85	113	142	170	198	227	255	283	312	340	369	397	425
1	454	482	510	539	567	595	624	652	680	709	737	765	794	822	850	879
2	907	936	964	992	1021	1049	1077	1106	1134	1162	1191	1219	1247	1276	1304	1332
3	1361	1389	1417	1446	1474	1503	1531	1559	1588	1616	1644	1673	1701	1729	1758	1786
4	1814	1843	1871	1899	1928	1956	1984	2013	2041	2070	2098	2126	2155	2183	2211	2240
5	2268	2296	2325	2353	2381	2410	2438	2466	2495	2523	2551	2580	2608	2637	2665	2693
6	2722	2750	2778	2807	2835	2863	2892	2920	2948	2977	3005	3033	3062	3090	3118	3147
7	3175	3204	3232	3260	3289	3317	3345	3374	3402	3430	3459	3487	3515	3544	3572	3600
8	3629	3657	3685	3714	3742	3771	3799	3827	3856	3884	3912	3941	3969	3997	4026	4054
9	4082	4111	4139	4167	4196	4224	4252	4281	4309	4338	4366	4394	4423	4451	4479	4508
10	4536	4564	4593	4621	4649	4678	4706	4734	4763	4791	4819	4848	4876	4905	4933	4961
11	4990	5018	5046	5075	5103	5131	5160	5188	5216	5245	5273	5301	5330	5358	5386	5415
12	5443	5472	5500	5528	5557	5585	5613	5642	5670	5698	5727	5755	5783	5812	5840	5868
13	5897	5925	5953	5982	6010	6039	6067	6095	6124	6152	6180	6209	6237	6265	6294	6322
14	6350	6379	6407	6435	6464	6492	6520	6549	6577	6606	6634	6662	6691	6719	6747	6776
15	6804	6832	6861	6889	6917	6946	6974	7002	7031	7059	7087	7116	7144	7173	7201	7229
16	7258	7286	7314	7343	7371	7399	7428	7456	7484	7513	7541	7569	7598	7626	7654	7683
17	7717	7745	7768	7796	7825	7853	7881	7910	7938	7966	7995	8023	8051	8080	8108	8136
18	8165	8193	8221	8250	8278	8307	8335	8363	8392	8420	8448	8477	8505	8533	8562	8590
19	8618	8647	8675	8703	8732	8760	8788	8817	8845	8874	8902	8930	8959	8987	9015	9044
20	9072	9100	9129	9157	9185	9214	9242	9270	9299	9327	9355	9384	9412	9441	9469	9497

Rules for Converting Avoirdupois Weights into Metric.

To convert avoirdupois pounds into grams, multiply by 500 and deduct 10 per cent.

NOTE.—The answer for weights by this rule will be too small by $55\frac{1}{2}$ grains (about) for every 1,000 av. pounds.

To convert grams into avoirdupois pounds, add 10 per cent. and divide by 500.

NOTE.—The answer for weights by this rule will be too small by about one-fourth of one per cent., or $32\frac{1}{2}$ grains for every 1,000 grams.

To convert avoirdupois pounds into half kilograms, or wine pints into half liters ($\frac{1}{2}$ liter=500 c. c.) deduct 10 per cent.

To convert half kilograms into avoirdupois pounds, or half liters into wine pints, add 10 per cent. For error see note above.

To convert avoirdupois ounces into grams, multiply by 30 and deduct 5 per cent. The answer will be too great by $2\frac{1}{4}$ grains for every ounce.

To convert grams into avoirdupois ounces, divide by 30 and add 5 per cent. The answer will be too small by nearly $\frac{3}{10}$ of one grain for each gram.

To convert yards into meters, deduct 10 per cent., and to convert meters into yards add 10 per cent.

The following approximate quantities may be found useful to the dispenser:

One Troy grain (or minim) is equal to 0.06 gram (or fluigram), or 6 centgs.

One drachm (or fluidrachm) is equal to 4 grams (or fluigrams).

One ounce (or fluid ounce) is equal to 30 grams (or fluigrams).

One gram (or fluigram) is equal to 15 grains (or minims).

Thirty grams (or fluigrams) are equal to 1 ounce (or fluid ounce).

The average "drop" is equal to 0.05 fluigram (or one-half fluidime), and 1 fluidime to 2 drops.

An average teaspoon holds 5 fluigrams; a dessertspoon, 10 fluigrams; a table-spoon, 20 fluigrams, and a wine glass, 75 fluigrams.—*Dr. Oldberg.*

CRYSTALLIZATION TABLE.

It is often desirable to know at which point the evaporation of a solution is to be interrupted in order to procure a good crop of crystals on cooling. The following table has been published by E. Finot and Arm. Bertrand for the more important substances. It is to be understood that the density (which is given according to Baumé's scale) is that of the *warm* solution :

Aluminum sulphate.....	25	Nickel acetate.....	30
Alum (amm. or pot.).....	20	“ ammon. sulphate	18
Ammonium acetate.....	14	“ chloride.....	50
“ arsenate.....	50	“ sulphate	40
“ benzoate.....	5	Oxalic acid.....	12
“ bichromate.....	28	Potass. and sod. tartrate.....	30
“ bromide.....	30	Potassium arsenate.....	36
“ chloride.....	12	“ benzoate.....	2
“ nitrate.....	29	“ bisulphate	35
“ oxalate.....	5	“ bromide.....	40
“ phosphate.....	35	“ chlorate.....	22
“ sulphate.....	28	“ chloride.....	25
“ sulphocyanide	18	“ chromate.....	38
“ tartrate.....	25	“ citrate.....	36
Barium ethylsulphate.....	43	“ ferrocyanide.....	38
“ formate.....	32	“ iodide.....	17
“ hyposulphite.....	24	“ nitrate.....	28
“ nitrate.....	18	“ oxalate.....	30
“ oxide.....	12	“ permanganate.....	25
Bismuth nitrate.....	70	“ sulphate.....	15
Boric acid.....	6	“ sulphite.....	25
Cadmium bromide.....	65	“ sulphocyanide.....	35
Calcium chloride.....	40	“ tartrate.....	48
“ ethylsulphate.....	36	Soda.....	28
“ lactate.....	8	Sodium acetate.....	22
“ nitrate.....	55	“ ammon. phos.....	17
Cobalt chloride.....	41	“ arsenate.....	36
“ nitrate.....	50	“ borate.....	24
“ sulphate.....	40	“ bromide.....	55
Copper acetate.....	5	“ chlorate.....	43
“ ammon. sulph.....	35	“ chromate.....	45
“ chloride.....	45	“ citrate.....	36
“ nitrate.....	55	“ ethylsulphate	37
“ sulphate.....	30	“ hyposulphite	24
Iron-ammon. oxalate.....	30	“ nitrate.....	40
“ ammon. sulphate	31	“ phosphate.....	20
“ sulphate.....	31	“ pyrophosphate.....	18
“ tartrate.....	40	“ sulphate.....	30
Lead acetate.....	42	“ tungstate.....	45
“ nitrate.....	50	Strontium bromide.....	50
Magnesium chloride.....	35	“ chlorate.....	65
“ lactate.....	6	“ chloride.....	34
“ nitrate.....	45	“ nitrate.....	40
“ sulphate.....	40	Tin chloride (stannous).....	75
Manganese chloride.....	47	Zinc acetate.....	20
“ lactate.....	8	“ ammon. chloride.....	43
“ sulphate.....	44	“ nitrate.....	55
Mercury cyanide.....	20	“ sulphate.....	45

Freezing Points of Alcoholic Liquids.

THE following table, showing the freezing point of mixtures of absolute alcohol and water, as ascertained by experiment, was compiled by Von F. M. Raoult :

Freezing Point.		Percentage of alcohol by weight.	Percentage by volume.	Freezing Point.		Percentage of alcohol by weight.	Percentage by volume.
Fahr.	Cen.			Fahr.	Cen.		
31.1	-0.5	1.32	1.6	14.0	-10.0	23.60	23.3
30.2	-1.0	2.65	3.2	10.4	-12.0	27.60	26.4
29.3	-1.5	3.97	4.8	6.8	-14.0	31.20	29.1
28.4	-2.0	5.50	6.3	3.2	-16.0	35.10	31.3
27.5	-2.5	6.62	7.8	-0.4	-18.0	39.00	33.8
26.6	-3.0	7.95	9.2	-4.0	-20.0	42.80	36.1
25.7	-3.5	9.27	10.6	-7.6	-22.0	46.60	38.3
24.8	-4.0	10.60	11.8	-7.6	-22.0	46.60	38.3
23.9	-4.5	11.90	13.1	-11.2	-24.0	50.60	40.0
23.0	-5.0	13.00	14.2	-14.8	-26.0	54.80	41.6
21.2	-6.0	15.30	16.4	-18.4	-28.0	59.20	43.7
19.4	-7.0	17.80	18.7	-22.0	-30.0	64.00	46.2
17.6	-8.0	19.80	20.4	-25.6	-32.0	70.00	47.9
15.8	-9.0	21.90	21.9				

In the mixture containing from one to ten per cent. in weight of alcohol, the freezing point falls about 0.377° C. for every one per cent. of alcohol, the latter being simply in solution and not in combination. In the mixtures containing from ten to twenty-four per cent. of alcohol, the freezing point sinks irregularly. In the solutions containing from twenty-four to fifty-one per cent. of alcohol, the freezing point sinks 0.583° C. for every one per cent. of alcohol, but it is no longer proportional to the whole quantity of alcohol present. In greater quantity than fifty-one per cent. of alcohol there is no regularity in the freezing point, indicating an alteration in the nature of the ice formed. The difference between the freezing points in beers and wines and that of the mixtures of alcohol and water is due to acids and salts contained in the wines. This difference increases in proportion to the quantity of alcohol, one degree for every one per cent.

Solvents for Iodoform.

DR. VULPIUS, Director of the Academical Hospital in Heidelberg, has examined the relations of several solvents for iodoform, and finds that at the ordinary temperature the degree of solubility in 100 parts of the various menstrua is as follows :

Petroleum ether.....	1 part.
Benzine.....	1.5 "
Oil of turpentine.....	4 parts.
" lavender.....	7 "
" cloves.....	8 "
" fennel.....	9 "
" rosemary.....	9 "
" cassia (fr. cassia cinnamonca).....	14 "
" cumin.....	16 "

From this it appears that there is some connection between the dissolving power and the proportion of oxygen contained in the above liquids, such power being greatest in those oils which contain the most oxygen. A solution of iodoform in benzine or petroleum ether soon turns pink. A 5 per cent. solution of iodoform in chloroform very quickly assumes a dark-red color.

The Climates of the United States.

THE following table shows the mean annual temperature of the atmosphere at a given point in each of the forty-nine States and Territories of the Union. The place is selected as either the capital or some leading city or town where observations have been most continuously kept :

State or Territory.	Place of Observation.	Mean Annual temperature.	State or Territory.	Place of Observation.	Mean Annual temperature.
Alabama.....	Mobile.....	66°	Mississippi.....	Jackson.....	64°
Alaska.....	Sitka.....	46°	Missouri.....	St. Louis.....	55°
Arizona.....	Tucson.....	69°	Montana.....	Helena.....	43°
Arkansas.....	Little Rock.....	63°	Nebraska.....	Omaha.....	49°
California.....	San Francisco.....	55°	Nevada.....	Camp Winfield Scott.....	50°
Colorado.....	Denver.....	48°	New Hampshire.....	Concord.....	46°
Connecticut.....	Hartford.....	50°	New Jersey.....	Trenton.....	53°
Dakota.....	Fort Randall.....	47°	New Mexico.....	Santa Fe.....	51°
Delaware.....	Wilmington.....	53°	New York.....	Albany.....	48°
Dist. Columbia.....	Washington.....	55°	North Carolina.....	Raleigh.....	59°
Florida.....	Jacksonville.....	69°	Ohio.....	Columbus.....	53°
Georgia.....	Atlanta.....	58°	Oregon.....	Portland.....	53°
Idaho.....	Fort Boise.....	52°	Pennsylvania.....	Harrisburg.....	54°
Illinois.....	Springfield.....	50°	Rhode Island.....	Providence.....	48°
Indiana.....	Indianapolis.....	51°	South Carolina.....	Columbia.....	62°
Indian Territory.....	Fort Gibson.....	60°	Tennessee.....	Nashville.....	53°
Iowa.....	Des Moines.....	49°	Texas.....	Austin.....	67°
Kansas.....	Leavenworth.....	51°	Utah.....	Salt Lake City.....	52°
Kentucky.....	Louisville.....	56°	Vermont.....	Montpelier.....	43°
Louisiana.....	New Orleans.....	69°	Virginia.....	Richmond.....	57°
Maine.....	Augusta.....	45°	Washington Ter.....	Steilacoom.....	51°
Maryland.....	Baltimore.....	54°	West Virginia.....	Romney.....	52°
Massachusetts.....	Boston.....	48°	Wisconsin.....	Madison.....	45°
Michigan.....	Detroit.....	47°	Wyoming.....	Fort Bridger.....	41°
Minnesota.....	St. Paul.....	42°			

Average Temperature at New York.

THE following table represents the average of the highest temperature at New York, each day for the month, and the average of each day's lowest point for the same period for the past five years. The average for each year and the average monthly temperature for the five years are also given :

	1877.	1878.	1879.	1880.	1881.	5 Years.
	Max. Min.	Max. Min.	Max. Min.	Max. Min.	Max. Min.	Max. Min.
January.....	35 19½	40 24½	33½ 19½	46½ 32½	35½ 19½	38 27½
February.....	46 28½	42 26	34½ 21½	49½ 27½	27 22½	40½ 25½
March.....	44½ 29½	53 35½	43½ 32½	44½ 20½	43½ 32	46½ 32
April.....	57½ 39½	60½ 45½	54½ 38½	58 41½	55½ 38½	57½ 40½
May.....	68 50½	60½ 51	69½ 53½	75½ 56½	69½ 53½	69½ 53½
June.....	75½ 61½	73½ 58½	77½ 61½	80½ 62½	72 58	76½ 60½
July.....	82½ 68	82½ 67½	82½ 65½	82½ 66½	80½ 64½	82½ 66½
August.....	82½ 67½	79½ 65½	79 64	78 64½	82½ 63½	80½ 65½
September.....	74½ 59½	75 60½	70½ 57½	73½ 59½	80½ 62½	74½ 59½
October.....	64½ 49½	66½ 49½	69½ 53½	63 46½	68 51	66½ 59½
November.....	53 39½	51 37½	50½ 36½	46½ 32½	53½ 39½	50½ 37½
December.....	47½ 32½	38½ 26½	44½ 30½	33½ 21½	47½ 34½	42½ 29½
Average.....	61 45½	60½ 45½	59½ 41½	60½ 45½	60½ 44½	60½ 45½

The Limit of Danger in the Use of Anæsthetics.

ACCORDING to the *British Medical Journal*, the number of deaths from the use of anæsthetics in Great Britain for the decade ending 1880 was 129. In this connection Professor Paul Bert made a great number of experiments on dogs, mice and sparrows, with ether, chloroform, amylene, bromide of ethyl, and bichloride of methylene. His principal object was to determine the differences which separate anæsthetic doses from fatal doses; that is, the proportion in which the anæsthetic agent becomes mingled with the blood in order that it may induce only anæsthesia, or cause the death of the animal. The number of grams of the anæsthetic to 100 liters of air necessary to produce these effects is as follows:

	DOG.		MOUSE.		SPARROW.	
	Anæsthesia.	Death.	Anæsthesia.	Death.	Anæsthesia.	Death.
Ether	37	74	12	25	18	40
Chloroform	15	30	6	12	9	18
Amylene	30	55	15	30	30	60
Bromide of ethyl.....	22	45	7.5	15	15	30
Bichloride of methylene..	21	42	12	20	12	24

It is seen from these figures that the quantities which caused death are exactly double those that are necessary for the production of anæsthesia.

Strengths of Solutions of Hydrobromic Acid.

TABLES of the amount of anhydrous acid present in solutions of hydrobromic acid have been already published, but as these were found to be somewhat incomplete and not concordant, Dr. Biel, of St. Petersburg, has made a fresh series of determinations, and has communicated the following table as representing the specific gravity at 15° C. of solutions containing from 1 to 50 per cent. of anhydrous acid:

1 per cent. ...1.0082	14 per cent. ...1.110	27 per cent. ...1.229	40 per cent. ...1.375
2 " ...1.0155	15 " ...1.119	28 " ...1.239	41 " ...1.388
3 " ...1.0230	16 " ...1.127	29 " ...1.249	42 " ...1.401
4 " ...1.0305	17 " ...1.136	30 " ...1.260	43 " ...1.415
5 " ...1.038	18 " ...1.145	31 " ...1.270	44 " ...1.429
6 " ...1.046	19 " ...1.154	32 " ...1.281	45 " ...1.444
7 " ...1.053	20 " ...1.163	33 " ...1.292	46 " ...1.459
8 " ...1.061	21 " ...1.172	34 " ...1.303	47 " ...1.474
9 " ...1.069	22 " ...1.181	35 " ...1.314	48 " ...1.490
10 " ...1.077	23 " ...1.190	36 " ...1.326	49 " ...1.496
11 " ...1.085	24 " ...1.200	37 " ...1.338	50 " ...1.513
12 " ...1.093	25 " ...1.209	38 " ...1.350	
13 " ...1.102	26 " ...1.219	39 " ...1.362	

FREE LIST.

THE following articles, of foreign growth, production or manufacture, are admitted free of duty :

Acacia.	Borate of Lime.	Cow-pox.
Acid, Arsenious crude.	Borax, crude.	Crocus Colcottra.
“ Carbolic, for chem-	Brazilwood in sticks.	Croton Bark.
“ ical or mfg. pur-	Brimstone, crude.	Cryolite.
“ Nitric, not chem.	Bromine.	Cubebs Berries.
pure.	Buchu Leaves.	Cudbear.
Albumen.	Burgundy Pitch.	Cummin Seed.
Alizarine.	Cajeput, oil of.	Curry and Curry Powders.
Alkanet Root.	Calamine.	Cutch.
Alkekengi.	Calamus Root, peeled.	Cuttlefish Bone.
Almond Oil.	Calisaya Bark.	Damar Gum.
Aloes.	Campeachy Wood, in	Digitalis Leaves.
Aluminum.	sticks.	Divi Divi.
Ambergis.	Camphor, crude.	Dyewoods in sticks.
Ammonia, crude.	Camwood, in sticks.	East India Gum.
Ammonium.	Canary Seed.	Elecampane Root.
Angelica Root.	Canella Alba Bark.	Ergot.
Aniline, Arseniate of.	Cantharides.	Fennel Seed.
“ Oil, crude.	Cape Gum.	Fœnugreek Seed.
Anise Seed.	Caraway, Oil of.	Fibrine.
“ Oil.	“ Seed.	Fish Glue.
Annotto Seed.	Cardamom Seed.	Fish Oil, of American
“ All extracts of.	Carui, Oil or Seed.	Fisheries.
Anthos, oil of.	Cascarilla Bark.	Fish Sounds.
Aquafortis.	Castor, or Castoreum.	Foxglove.
Arabic, Gum.	Cutch.	Frankincense Gum.
Archil Weed.	Catgut.	French Leaf, extract of.
“ Extract of.	Chalk, unmanufactured.	Fustic, in sticks.
Argols, crude.	Chamomile Flowers.	Galangal Root.
Arsenic.	Charcoal.	Galbanum Gum.
“ Sulphide of.	China Root, medicinal.	Gambier.
Aurine, or Rosalic Acid.	Chloride of Lime.	Gamboge Gum.
Balm of Gilead.	Cicuta, or Conia.	Garancine.
Balsam Copaiba.	Cinchona Root and Bark.	Gentian Root.
“ Fir.	Cinnamon, Oil of.	Ginger Root.
“ Peruvian.	Citrate of Lime.	Ginseng Root.
“ Tolu.	Citronella Oil.	Gold Size.
Barbary Gum.	Civet, crude and oil of.	Gomline.
Barilla.	Cliffstone, unmanufac-	Grains of Paradise.
Bark, all except cork.	tured.	Grease for Soap Stock.
Basswood Bark.	Cocculus Indicus.	Guinea Grains.
Bdellium Gum.	Cochineal.	Gypsum, unground.
Beans, Tonka.	Cocoa, crude and shells.	Hellebore Root.
“ Vanilla.	Cocoanut Oil.	Hemlock Bark.
Belladonna, Root.	Colocynth Apples.	“ Seed and Leaf.
“ Leaves.	Coltsfoot Root.	Henbane Leaves.
Benzoin, Gum.	Colombo Root.	Hyoscyamus.
Bergamot Oil.	Conium Seed and Leaves.	Iceland Moss.
Berries for dyeing.	Contrayeroa Root.	India Madder, ground.
Bezoar Stones.	Copal Gum.	“ “ extracts
Bitter Apples.	Copper, Subacetate of.	and roots.
Black Salts of Crude	“ Paste Sulphides	Indian Hemp.
Potash.	of.	Indigo, and powdered.
Bleaching Powders.]	Coriander Seed.	Iodine, crude.
Blue Galls.	Cork Bark cut in small	Ipecac, or Ipecacuanha.
Boracic Acid.	squares.	Iris Root.
	Cowhage, or Cowitch.	Iron, Oxide of.

Isinglass.	Oil of Juniper.	Seedlac.
Jalap.	“ Lemongrass,	Senegal Gum.
Japan Wax.	“ Origanum.	Senna Leaves.
Jeddo Gum.	“ Rosemary.	Sesame Seed.
Juniper Berries.	“ Spike.	“ Oil, not salad.
Kauri Gum.	“ Thyme.	Shellac.
Kermes, crude mineral.	“ Valerian.	Skeletons.
Kryolite.	“ Vitriol.	Soap Stock.
Kyanite.	Olibanum, Gum.	Spanish Flies.
Lac Dye.	Orange Flowers or Buds.	Spermaceti Oil, of Ameri-
“ Spirits.	“ Peel, dried.	can fisheries.
“ Sulphur.	Orpiment.	Squills.
Lactarin.	Orris Root.	Stavesacre, crude.
Laurel Berries.	Osmium.	Stearine.
Lavender, Ess. or oil of.	Oxalic Acid.	Sticlac.
Leaves, crude medicinal.	Oxymuriate.	St. John's Bread.
Lemon Peel, dried.	Palm Oil.	Storax or Styrax.
Licorice Root.	Pastel.	Strontia, Oxide of.
Lima Bark.	Pellitory Root.	Strontium, protoxide of.
Lime, Borate of.	Persis.	Succinic Acid.
“ Citrate of.	Peruvian Bark.	Sugar of Milk.
“ Chloride of.	Phosphates, fertilizing.	Sulphuret of Antimony.
“ Phosphate of, crude.	Picric Acid.	Sulphuric Acid, not fu-
Linseed Cake.	Plants, crude medicinal.	ming.
Litmus.	Plaster of Paris, un-	Talc.
Lye, of wood ashes.	ground.	Tanning Articles, crude.
Mace, Oil of.	Plumbago, pure.	Tapioca.
Madder, and extract of.	Polypodium.	Tartar, crude or partly re-
Manganese, oxide and ore	Poppyheads, crude.	fin.
of.	Poppyseed Oil.	Terra Alba, aluminous.
Marshmallows.	Potassa, Muriate of.	Terra Japonica.
Mastic Gum.	Protoxide of Strontium.	Tincal.
Millet Seed.	Pumice Stone or Brick.	Tonka Beans.
Mineral Waters, natural.	Pyrogallic Acid.	Tragacanth Gum.
Mosses, all crude.	Quassia Wood.	Tripoli.
Murexide, a dye.	Quickgrass Root.	Turmeric.
Muriate of Potassa.	Quicksilver.	Uranium, Oxide of.
Muriatic Acid.	Quilla Bark.	Vaccine Virus.
Musk, crude in pod.	Quinine, salts of.	Valonia Nut for tanning.
Mustard Seed.	Red Sanders Wood.	Vanilla Beans.
Myrabolan, crude.	Red Tartar.	Vegetables for dyeing,
Myrrh Gum.	Redwood in sticks,	crude.
Nitrate of Soda.	Rennets, raw or prepared.	Venice Turpentine.
Nitro-Picric Acid.	Rhubarb.	Verdigris.
Nutgalls.	Rocoa.	Vomic Nut.
Nuts, crude for dying.	Rose Leaves.	Wax, Bay or Myrtle.
Nux Vomica.	Rosalic Acid.	“ Brazilian.
Oak Bark.	Rottenstone.	“ Chinese.
Oilcake, of linseed.	Saffron, and extract.	Whale Oil, American fish-
Oil of Amber.	Safflower, and extract.	eries.
“ Ambergris.	Salep.	White Chalk.
“ Attar of Rose.	Salicene.	Wine Lees, or crude Tar-
“ Bene, not salad.	Salicylic Acid.	tar.
“ Cassia.	Sandrac Gum.	Woad.
“ Cedrat.	Sarcocolla Gum.	Wood Ashes, and lye of.
“ Chamomile.	Sarsaparilla Root.	Wormseed, Levant.
“ Fennel.	Sassafras Bark and Root.	Xylonite.
“ Jessamine.	Sawdust for dyeing.	Zaffer.
“ Juglaudium.	Scammony, Resin of.	

Exceptions.—By a convention between the United States and the King of the Hawaiian Islands, the following articles from those islands are admitted free of duty when imported directly from such islands: Arrowroot, Castor Oil, Seeds and Tallow.

PHARMACEUTICAL ASSOCIATIONS.

THE following associations comprise all from whom we have been able to secure official reports of officers, place of meeting, etc.

AMERICAN PHARMACEUTICAL ASSOCIATION.

President.—P. W. Bedford, of New York.

Vice-Presidents.—Emlen Painter, of California ; George Leis, of Kansas ; John F. Judge, of Ohio.

Treasurer.—Charles A. Tufts, of New Hampshire.

Permanent Secretary.—John M. Maisch, of Pennsylvania.

Reporter on Progress of Pharmacy.—C. Lewis Diehl, of Kentucky.

Members of the Council whose Time Expires in 1884.—John L. Lemberger, of Pennsylvania ; W. J. M. Gordon, of Ohio ; John Ingalls, of Georgia.

Committee on Drug Market.—Louis Lehn, of New York ; James C. Steele, of California ; P. C. Candidus, of Alabama ; Thomas Whitfield, of Illinois ; John P. Smith, of Maryland.

Committee on Papers and Queries.—J. U. Lloyd, of Ohio ; T. H. Ambler, of New York ; W. W. Bartlett, of Massachusetts.

Committee on Prize Essays.—C. Lewis Diehl, of Kentucky ; John F. Judge, of Ohio ; Emil Scheffer, of Kentucky.

Committee on Legislation.—John M. Maisch, of Pennsylvania ; Sam'l A. D. Sheppard, of Massachusetts ; Charles Mohr, of Alabama.

Next Meeting.—Niagara Falls, N. Y., second Tuesday in September, 1882, H. E. Griffith, Local Secretary.

WESTERN WHOLESALE DRUG ASSOCIATION.

President.—J. S. Birdsall, Cincinnati.

Vice-Presidents.—A. A. Mellier, St. Louis ; John R. Drake, Milwaukee ; M. C. Williams, Detroit ; Charles West, Toledo ; R. A. Robinson, Louisville.

Treasurer.—S. M. Strong, Cleveland.

Secretary.—A. B. Merriam, Cincinnati.

Board of Control.—C. F. G. Meyer, St. Louis ; George A. Kelly, Pittsburg ; A. Keifer, Samuel Loughlin, Wheeling ; P. C. Wheeler, Peoria, Ill.

Committee on Adulterations.—C. B. Allaire, Chairman ; C. W. Lloyd, T. W. Steam, George H. Schaeffer, C. F. G. Meyer, W. R. Warner, Thomas H. Logan, W. C. M. Gordon.

Committee on Drug Market.—Horace Benton, Chairman ; L. A. Lange, E. W. Fitch, John Birks, W. C. Williams and F. W. Schultz.

Committee on Paints, Oil and Glass.—C. F. G. Meyer, Chairman ; J. C. Richardson, Daniel Howard, P. C. Wheeler, E. C. Hopkins.

Committee on Proprietary Goods.—W. A. Robinson, Chairman ; Thomas Lord, Daniel Myers, James Richardson, George A. Kelly, A. Keifer, J. S. Kinnan, A. B. Mena.

Committee on Working of Combinations.—Thomas Lord, Chairman ; A. J. Wilkinson, Horace Benton, Otto Rauchfuss, George S. Irwin.

Committee on Weights and Measures.—A. A. Mellier, Chairman ; W. J. Walding, Samuel Badger.

Committee on Membership.—Peter Van Schaack, Chairman ; George Merrell, J. E. Davis, E. S. Fahnestock, W. H. Collins, D. E. Lynds.

Committee on Credits, Collections and Cash Discounts.—H. H. Burton, Chairman ; I. S. Farrand, Samuel M. Strong, Arthur Peter, Charles West, John B. Drake, S. B. Kauffmann, J. W. Plummer.

Committee on Fire Insurance.—C. H. Pettet, Chairman ; Horace Bahn, A. Vogeler, F. Dahmen, H. A. Herlbert, F. A. Swift, J. H. McCullough, H. Merrell.

Committee on Commercial Travelers.—W. H. Runkle, Chairman ; Robert Browning, C. F. Goodman, George W. Hopkins, Robert Morrison.

Committee on Legislation.—Daniel R. Noyes, Chairman ; James Richardson, Daniel Myers, George A. Kelly, A. H. James, Samuel I. Hale, John McKesson, Jr., S. A. Talman, F. B. Wilson.

Next Meeting.—At Cleveland, Ohio, second Wednesday in November, 1882.

ALABAMA PHARMACEUTICAL ASSOCIATION.

President.—P. C. Candidus.

Vice-Presidents.—J. T. Bradfield and J. B. Collier.

Secretary.—S. W. Gillespie.

Treasurer.—Y. P. Newman.

Executive Committee.—T. J. Savage, of Mobile ; E. P. Braun, of Mobile, and John L. Rison, of Huntsville.

Next Meeting.—At Selma, May 10, 1883.

CALIFORNIA PHARMACEUTICAL SOCIETY.

President.—Emlen Painter.

Vice-Presidents.—Wm. M. Searby, James Topley.

Corresponding and Recording Secretary.—Fred. Grazer.

Treasurer.—Wm. J. Bryan.

Librarian and Curator.—Ph. L. Vreeland.

Editor.—William M. Searby.

Board of Trustees.—Emlen Painter, John Calvert, John Dawson, D. W. Kirkland, S. A. McDonnell, Fred. Keil, F. A. Grazer.

CONNECTICUT PHARMACEUTICAL ASSOCIATION.

President.—Dwight Phelps, of West Winsted.

Vice-Presidents.—N. D. Sevin, of Norwich, and Walter R. Francis, of New Haven.

Secretary.—Frederic Wilcox, of Waterbury.

Treasurer.—George P. Chandler, of Hartford.

Executive Committee.—E. S. Sykes, of Hartford; N. J. Beers, of New Haven; F. S. Stevens, of Bridgeport; A. F. Wood, of New Haven; W. W. Mosher, of Meriden; J. T. Renouff, of Winsted.

Committee on Progress of Pharmacy.—Frank M. Wilson, of Willimantic; Chas. A. Rapelyea, of Hartford; W. A. Spaulding, of New Haven; E. W. Thompson, of New Britain; Chas. B. Botsford, of New Milford.

Committee on Legislation.—E. S. Sykes, of Hartford; L. I. Munson, of Waterbury; E. A. Gessner, of New Haven; Stephen Goodrich, of Hartford.

Committee on Trade Interests.—Hugh H. Osgood, of Norwich; E. C. Frisbie, of Hartford; G. P. Chandler, of Hartford; W. R. Francis, of New Haven; Henry Woodward, of Middletown.

Next Meeting.—At Hartford, on the first Tuesday in February, 1883.

ILLINOIS PHARMACEUTICAL ASSOCIATION.

President.—F. C. Bourscheidt, of Peoria.

Vice-Presidents.—William Bowers, of Albany; A. A. Brown, of Sterling; J. P. Henry, of Arcola.

Secretary.—Matt. W. Borland, of Chicago.

Treasurer.—A. P. Cunningham, of Champaign.

Executive Committee.—Theron E. Fell, of Bloomington; R. Scheffbauer, of Chicago; and George Babel, of Kankakee.

Next Meeting.—At Chicago, second Tuesday in October, 1882.

INDIANA STATE PHARMACEUTICAL ASSOCIATION.

President.—George H. Andrews, of Muncie.

Vice-Presidents.—F. C. Schmidt, of Evansville ; Charles V. Pyle, of Warsaw, and A. G. Luken, of Richmond.

Secretary.—J. R. Perry.

Treasurer.—Emil Martin.

Executive Committee.—Jacob Bauer, of Terre Haute ; J. N. Hurty, of Indianapolis, and David Hilt, of Lafayette.

Delegates to American Pharmaceutical Association.—George W. Sloan, of Indianapolis ; Leo Eliel, of South Bend ; R. C. Knolful, of New Albany ; Emmett Ramal, of Rensselaer, and H. J. Watzen, of Vincennes.

IOWA STATE PHARMACEUTICAL ASSOCIATION.

President.—A. R. Townsend, Boone.

Vice-Presidents.—J. W. Ellis, of Patterson; C. R. Wallace, of Independence; and W. C. Bryant, of Cedar Falls.

Secretary.—Emil L. Boerner, Iowa City.

Treasurer.—C. H. Ward, Des Moines.

Executive Committee.—Norman Lichty, of Des Moines; J. A. Treat, Stuart; W. E. Shrader, Iowa City.

Delegates to the American Pharmaceutical Association.—Messrs. Hogin, Miles, Schafer, Rigg and Barker. Alternates—Ward, Crosby, Ballard, Laffer and Hammer.

Committee on Trade Interests.—Milo W. Ward, James W. Hatton, Shortland Harris.

Committee on Pharmacy and Queries.—Theodore W. Reute, Chas. E. Harlan, Olaf E. Olson.

Committee on Legislation.—L. H. Bush, Geo. H. Schafer, James P. Morey.

KENTUCKY PHARMACEUTICAL ASSOCIATION.

President.—G. A. Zwick, of Covington.

Vice-Presidents.—G. A. Holzhauer; Samuel Curry, of Danville, and H. Megill, of Owensboro.

Recording Secretary.—Mr. Elleway, of Louisville.

Corresponding Secretary.—Mr. McDowell, of Eminence.

Treasurer.—Peter Nodler, of Covington.

Next Meeting.—At Eminence, on the Third Thursday in May, 1883.

LOUISIANA PHARMACEUTICAL ASSOCIATION.

President.—Jos. T. Thibodeaux, Lafourche Parish.

Vice-Presidents.—Alex. K. Finlay, Dr. F. M. Brooks.

Recording Secretary.—Hiland Flowers, New Orleans.

Corresponding Secretary.—Ben. Lewis.

Treasurer.—Jno. B. Lavigne.

Executive Committee.—R. N. Girling, New Orleans; F. Gonaux, E. G. Wunderlich, S. Hiriart, and John Johnson, New Orleans.

Committee on Trade Interests.—St. Cyr Fourcade, Chairman; Wm. C. Harrison, of Orleans, and E. N. Roth, of Lafourche.

Committee on Papers and Queries.—F. C. Godbold, Chairman; B. Tuma, of Orleans, and R. A. Kearney, of Iberville.

Committee on Adulteration and Deterioration of Drugs.—John Johnson, chairman; Hiland Flowers and R. N. Girling, all of New Orleans.

Next Meeting.—At New Orleans on the first Monday in April, 1883.

MASSACHUSETTS PHARMACEUTICAL ASSOCIATION.

President.—S. A. D. Sheppard, of Boston.

Vice-Presidents.—H. A. Estabrook, of Fitchburg; William Bush, of Worcester, and F. F. Whiting, of Great Barrington.

Secretary.—J. W. Colcord, of Lynn.

Treasurer.—F. H. Butler, of Lowell.

Local Secretary.—W. P. Draper, of Springfield.

Executive Committee.—W. G. Luscomb, of Salem; F. M. Pease, of Lee, and George E. Fairbanks, of Worcester.

Committee on Papers and Queries.—Professor George F. H. Markoe, of Boston; F. H. Macurdy, of Fitchburg; E. G. Frothingham, of Haverhill; W. W. Bartlett, of Boston, and C. P. Allen, of Springfield.

Committee on Trade Interests.—J. J. Estey, of Rockland; F. M. Oxley, of Ashland; J. A. Gilman, of Boston; H. M. Whitney, of Lawrence, and A. E. Webber, of Springfield.

Trustees of Permanent Fund.—L. M. Green, of Worcester; F. B. Nichols, of Salem, and A. S. Waitt, of North Adams.

Committee on Legislation.—H. M. Whitney, of Lawrence; C. H. Price, of Salem; F. W. Pease, of Lee; J. J. Estey, of Rockland; Converse Ward, of Athol; B. F. Stacey, of Boston; C. B. Emerson, of Haverhill; S. C. Tozzer, of Lynn; W. B. Muse, of Indian Orchard; J. W. Colton, of Westfield; F. H. Butler, of Lowell; F. L. Whitney, of Great Barrington; C. E. Ball, of Holyoke; George E. Dinsmore, of Worcester, and E. B. Saunders, of Gloucester.

Delegates to the National Association.—Arthur Hudson, of Newton; Thomas B. Nichols, of Salem; W. F. Sawyer, of Boston; F. H. Butler, of Lowell, and S. C. Tozzer, of Lynn.

Delegates to New York State Association.—H. M. Whitney, of Lawrence, and C. E. Ball, of Holyoke.

Next Meeting.—At Springfield, on the Third Wednesday in May, 1883.

NEW JERSEY PHARMACEUTICAL ASSOCIATION.

President.—Joseph P. Canby, of Atlantic City.

Vice-Presidents.—Joseph Bassett, of Salem, and D. W. Brant, of Newark

Treasurer.—Wm. Rust, of New Brunswick.

Recording Secretary.—A. P. Brown, of Camden.

Corresponding Secretary.—R. W. Van De Voort, of Newark.

Standing Committee.—J. P. Bassett, ex-officio, Thomas Combs, H. P. Thorne, Charles Holzhauer, and R. J. Shaw.

Next Meeting.—At Orange, on the Third Wednesday in May, 1883.

NEW YORK STATE PHARMACEUTICAL ASSOCIATION.

President.—A. B. Husted, Albany.

Vice-Presidents.—J. H. Eaton, Syracuse; R. K. Smither, Buffalo; F. K. Brown, Deposit.

Secretary.—Clay W. Holmes, Elmira.

Local Secretary.—Charles H. Goss, Albany.

Treasurer.—Charles H. Butler, Oswego.

Next Meeting.—At Albany on the second Tuesday and Wednesday in June, 1882.

NORTH CAROLINA PHARMACEUTICAL ASSOCIATION.

President.—S. J. Hinsdale, of Fayetteville.

Vice-Presidents.—William Simpson, Raleigh; E. H. Meadows, Newbern; V. O. Thompson, Winston.

Secretary.—T. C. Smith, Charlotte.

Treasurer.—Jno. S. Pescud, Raleigh.

Next Meeting.—At Winston, second Wednesday in August, 1882.

OHIO STATE PHARMACEUTICAL ASSOCIATION.

President.—Dr. D. C. Peters, of Zanesville.

Vice-Presidents.—E. N. Shellentracer, of Cleveland; F. Harrington, of Logan.

Secretary.—L. C. Hopp, of Cleveland.

Treasurer.—Charles Huston, of Columbus.

Executive Committee.—James M. Ayers, of Cincinnati; C. W. West, of Toledo, and Philip Hoglan, of Newcomerstown.

Delegates to American Pharmaceutical Association.—E. M. Hatton, J. N. Reed, Chas. Huston, A. Maysee, and J. A. Nipgen.

Next Meeting.—At Cleveland, on the Third Wednesday in May, 1883.

PENNSYLVANIA PHARMACEUTICAL ASSOCIATION.

President.—George A. Kelly, of Pittsburgh.

Vice-Presidents.—Alonzo Robbins, of Philadelphia, and J. B. Duble, of Williamsport.

Secretary.—J. A. Miller, of Harrisburg.

Treasurer.—Joseph L. Lemberger, of Lebanon.

Executive Committee.—James A. Meyers, of Columbia ; Wilbur F. Horn, of Carlisle, and Jacob H. Stein, of Reading.

Local Secretary.—C. F. Randolph, of Altoona.

Next Meeting.—At Altoona, on Tuesday, June 13, 1883.

VIRGINIA STATE PHARMACEUTICAL ASSOCIATION.

Executive Committee.—John B. Purcell, of Richmond ; H. A. Wiseman, of Danville, and George C. Stark, of Petersburg.

Committee on Papers and Queries.—J. W. Thomas, Jr., Hugh Blair, and H. W. Cole.

Delegates to American Pharmaceutical Association.—Polk Miller, T. F. Knock, T. Roberts Baker, H. W. Cole, and F. H. Masi.

Next Meeting.—At Norfolk, on the third Tuesday in May, 1883.

WISCONSIN PHARMACEUTICAL ASSOCIATION.

President.—F. Robinson, of Kenosha.

Vice-Presidents.—Adam Conrath, Milwaukee ; F. F. Prentice, Janesville ; F. Wolfreim, West Bend ; George Baumann, Oshkosh ; R. Saurherring, Mayville ; W. G. Spencer, Manston ; J. A. Farnham, Fennimore ; and A. Frayser, New London.

Secretary.—E. B. Heimstreet, Janesville.

Treasurer.—A. J. Roberts, Janesville.

Next Meeting.—At Oshkosh, second Tuesday in August, 1882.

To Measure Goods for Shipment.

PACKAGES of merchandise are charged freight by the ton measurement, excepting goods of a particular description, such as iron, machinery, and heavy goods generally. The custom having reference to bulk and not to weight, confusion often arises from the want of this necessary information. The freight ton being 40 cubic feet of space, any package may be measured according to the form of the solid. Thus, the cubical contents of all cases, boxes, and square or plain sided parcels may be found by multiplying the length, breadth, and depth together. Multiply the total by .025, and the result shows the tonnage for freight.

Example.—Six cases of goods, each being 4 feet long, 2 feet broad, and 2 feet deep; required, the tonnage for freight.

$$4 \times 2 \times 2 = 16 \text{ feet each,} \\ 6 \text{ cases}$$

$$\begin{array}{r} 96 \text{ total cubic feet.} \\ \cdot 025 \end{array}$$

$$\begin{array}{r} 480 \\ 192 \end{array}$$

$$\hline 2.400$$

Answer, $2\frac{4}{10}$ tons, or 2 tons 8 cwt.

Solubility of Sodium and Potassium Salts.

I. F. LOENLE has determined the solubility in water of the medicinal salts of sodium and potassium of fair commercial quality. The columns grains give the number of grains dissolved by 75 c. c. or $\frac{1}{2}$ fluid ounce of distilled water.

Name.	Temperature 15° 5' C.		Temperature 26° 6' C.		Solution.
	Grains.	In parts. Salt Water.	Grains.	In parts. Salt Water.	
Sodii acetat.	214	1 in 1·63	334	1 in 0·68	Clear.
Bicarbonas	17	1 in 13·38	22	1 in 10·34	"
Boras	9	1 in 25·27	14	1 in 16·25	"
Bromidum	203	1 in 1·12	224	1 in 1·01	"
Carbonas	128	1 in 1·77	216	1 in 1·05	"
Chloridum	78	1 in 2·91	79	1 in 2·88	"
Hypophosphis	241	1 in 0·94	268	1 in 0·85	Milky.
Hyposulphis	360	1 in 0·63	436	1 in 0·52	"
Iodidum	394	1 in 0·58	463	1 in 0·49	Clear.
Nitras	179	1 in 1·27	196	1 in 1·16	"
Phosphas	32	1 in 7·11	72	1 in 3·16	"
Sulphas	77	1 in 2·95	120	1 in 1·89	"
Sulphis	140	1 in 1·62	155	1 in 1·46	"
Potassii acetat.	374	1 in 0·60	502	1 in 0·45	Milky.
Bicarbonas	67	1 in 3·39	79	1 in 2·88	Almost clear.
Bichromas	21	1 in 10·83	30	1 in 7·58	{ Clear. Reddish Yellow.
Bromidum	132	1 in 1·72	146	1 in 1·55	Clear.
Carbonas	350	1 in 0·65	385	1 in 0·59	Milky.
Chloras	13	1 in 17·50	17	1 in 13·38	Clear.
Citras	339	1 in 0·67	388	1 in 0·58	Milky.
Cyanidum	167	1 in 1·36	177	1 in 1·22	Clear.
Ferrocyanid	58	1 in 3·92	77	1 in 2·95	{ Clear. Pale Straw.
Hypophosphis	300	1 in 0·75	362	1 in 0·61	Milky.
Iodidum	325	1 in 0·70	336	1 in 0·67	Clear.
Nitras	49	1 in 4·64	84	1 in 2·70	"
Sulphas	21	1 in 10·83	26	1 in 8·75	"
Sulphis	27	1 in 8·42	40	1 in 5·66	Milky.
Sulphuret	406	1 in 0·56	509	1 in 0·44	{ Clear. Brown Yellow.
Tartras	310	1 in 0·73	352	1 in 0·64	Milky.

Rules for Converting Specific Gravity into Degrees Beaumé.

THE following rules will be found to be approximately correct—at least sufficiently so for all practical purposes—for the conversion of specific gravities into degrees Beaumé, and *vice versa*:

To Convert Degrees Beaumé into Specific Gravity.—1. For liquids heavier than water, subtract the degree of Beaumé from 145 and divide the remainder into 145. The quotient is the specific gravity (water being taken as 1,000). To reduce to the basis of water=1, mark off three decimal points. 2. For liquids lighter than water, add the degree of Beaumé to 130 and divide the sum into 140. The quotient is the desired specific gravity.

To Convert Specific Gravity into Degrees Beaumé.—1. For liquids heavier than water, divide the specific gravity into 145, and subtract the quotient from 145. The remainder gives the degrees Beaumé. 2. For liquids lighter than water, divide the specific gravity into 140, and subtract 130 from the quotient. The remainder will be the degree of Beaumé.

PATENTS GRANTED

IN THE DRUG, CHEMICAL, OIL, PAINT AND ALLIED TRADES IN 1881.

[Many of the specifications, accompanied with engravings, are illustrated.]

235,871.—**Explosive Compound.** Wm. Heick, San Francisco, Cal., assignor, by mesne assignment, to the Thunder Powder Company, same place. Filed April 3, 1880.

Claim.—An explosive compound, composed of honey and glycerine, treated with nitric and sulphuric acids, as hereinbefore described, chlorate of potash, nitrate of potash, prepared sawdust and prepared chalk, substantially in the manner described.

235,923.—**Tanning Extract.** Hiram L. Wilcox, Lincoln, Neb. Filed Nov. 27, 1878.

Claim.—As a new article of manufacture, the above described solid block, for use in tanning, consisting of a mixture of the dry and powdered *Polygonum Amphibium*, and a moist extract of the same plant.

235,960.—**Apparatus for Cooling, Disinfecting, Perfuming, &c.** George Praetorius, Breslau, Prussia, Germany. Filed May 20, 1880.

Claim.—An earthenware vessel, consisting of two chambers with an unglazed partition between them, forming a permanent part of the said vessel, as set forth.

236,051.—**Manufacture of Chloride of Zinc.** Edward J. Mallett, Jr., New York, N. Y. Filed May 3, 1880.

Claim.—The improvement in the art of obtaining zinc chloride, which consists in applying the refrigerant to the surface stratum only of a solution containing zinc sulphate and a salt, such as sodium chloride, substantially as set forth.

236,071.—**Catarrh Remedy.** John D. Olcott, Ypsilanti, Mich. Filed Oct. 8, 1880.

Claim.—A medical compound composed of Indian-turnio root, skunk-cabbage, sugar and gum-camphor, in about the proportions described.

236,115.—**Composition for use in Tanning.** Hienrick Trenk, Berlin, Germany, assignor to himself, Jean Ballatschano, and Constantin Ballatschano, Bucharest, Roumania. Filed July 20, 1880. Patented in Germany, April 24, 1880, in France, March 15, 1880.

Claim.—The herein-described composition of matter to be used in tanning, consisting of a concentrated solution of crude tartar or argol, to which a small quantity of chloride of zinc or some analogous salt, such as muriate of ammonia, chloride of nickel, or chloride of calcium, is added, all as specified and set forth.

236,150.—**Lubricating Compound.** Patrick H. Fitch, Youngstown, Ohio. Filed Aug. 7, 1880.

Claim.—A lubricating composition, consisting of common soap, sal soda, carbonate of ammonia, sal ammoniac, red lead, naphtha and water, substantially as described.

236,186.—**Bottle-Wrapper.** John Shellenberger, Indianapolis, Ind. Filed Nov. 23, 1880.

Claim.—As a new article of manufacture, the thin sheet wrapper *a*, having strips cut at one or both ends, and bent in the form of a twist at an angle to the body of the wrapper, substantially as shown and described.

236,214.—**Machine for Cutting Pills.** Thomas Daniels, Toledo, Ohio. Filed Sept 18, 1880.

Claim.—1. In a pill-machine, the base A, constructed as described, in combination with the movable frame C and the rings or washers K, substantially as and for the purpose described.

2. In a pill-machine, the base B, constructed as described, in combination with the movable frame H and the rings or washers K, substantially as and for the purpose set forth.

3. In a pill-machine, the rolling-pin E, in combination with the base A, the movable frame C, and the rings or washers K.

4. In a pill-machine, the cutting-frame F, for cutting the sheet of pill-mass into a square cake, for the purpose described.

5. In a pill-machine, the plate G, with numerous consecutive cells, for the purposes specified.

6. In a pill-machine, the strips of metal or other substance, J, with their attachments, in combination with the roller cutter I, the movable frame H, and the celled plate G, when used as and for the purpose set forth.

7. In a pill-machine, the combination of the base B with the movable frame H, the celled plate G, the strips and attachments, J, and the roller-cutter I, for the purposes described.

236,216.—**Marine Paint.** Robert H. Dimock, New Haven, Conn. Filed Feb. 9, 1880.

Claim.—1. The paint herein described, composed of linseed oil, sub-oxide of copper, and carbohc acid, compounded in the manner, and in and about the proportions described.

2. The process, substantially as herein described, for producing a marine paint, which consists in adding glucose to a hot solution of cupric sulphate, in then stirring the mixture and adding an alkaline solution, in then raising the temperature of the solution until a precipitate forms, in then collecting, filtering and washing and drying the precipitate, in then adding carbohc acid to the precipitate and in then mixing the compound with raw linseed oil.

236,251.—**Refining Apparatus for Spirits.** Pierre Perey, San Francisco, Cal. Filed July 23, 1880.

Claim.—1. The vessel A, adapted to receive alcoholic vapors from the still below and to discharge them at the top, and provided with the partitions or diaphragms C D, the tapering connecting-tubes E, with their bell shaped caps F, and the circulating pipes G H, whereby the passing vapors are condensed, substantially as herein described.

2. The vessel A, with its diaphragms C D, connecting-pipes E, and caps F, and the circulating-pipes G H, in combination with the inverted funnel or diaphragm M, with its opening E, and the perforated dome O, substantially as and for the purpose herein described.

3. The vessel A, with its diaphragms C D, tapering connecting-pipes E, and caps F, circulating-pipes G H, funnel M, and dome P, and the pipes Q, pipe K, and trap L, substantially as and for the purpose herein described.

236,268.—**Dye and Bleach Vat.** James Smith, Thornliebank, County of Renfrew, North Britain. Filed Sept. 6, 1880.

Claim.—The combination of the tank C, the upper and lower series of rollers, the intermediate beaters 17, the pipes 21 and 24, the intermediate pump 22, and the spray pipes 27, substantially as and for the purpose described.

236,330.—Process for the Manufacture of Glucose. Rudolph D'Heurese, New York, N. Y. Filed April 21, 1880.

Claim.—1. The process of treating corn in the manufacture of glucose, which consists in first steeping the corn, next removing the hulls and germs from the steeped corn, and in then ejecting by centrifugal apparatus from the starchy portion of the kernel the adhering soluble gluten previous to the wet grinding and sifting of the corn, substantially as and for the purpose described.

2. The process of manufacturing glucose from grain, said process consisting in first steeping the grain, next removing the hulls and also the germs from the steepest grain, then ejecting the soluble gluten from the starchy portion of the kernel, next grinding or crushing the rest and settling the starch, and in then treating the starch with acid until converted, and finally neutralizing the acid, as specified.

3. In the manufacture of glucose and starch-sugar from grain, or of other syrups, the process of eliminating the trace or remnant of sulphate of lime which process consists in first adding oxalic acid and then soda to the glucose, substantially as specified.

264,521.—Preserving Compound. Jean Wickersheimer, Berlin, Germany. Filed April 10, 1880.

Brief.—Consists of three liters of water, thirty-six grams of potash, fifteen grams of common salt, sixty grams of alum, nine grams of salicylic acid, forty-five grams of methyl-alcohol, and two hundred and fifty grams of glycerine mixed at 50° Celsius.

Claim.—A compound to preserve meat intended for food, consisting of salicylic acid, methyl-alcohol, and glycerine, and a solution of mineral antiseptics, consisting of potash, common salt, and alum, alum being the chief ingredient, substantially as described, and in the proportions specified.

236,265.—Apparatus for Extracting Dyes. James Semple and Wilkinson Crossley, Broad Brook, Conn. Filed Aug. 9, 1880.

Claim.—1. An improved apparatus for extracting dyes, constructed substantially as herein shown and described, consisting of a cylinder B, provided with bottom and discharge orifice, *a*, and tube and cap B B', man-holes C C', with adjustable covers D D, steam-heating and extract-discharging pipe F, having connected steam-inlet pipe I, and discharge pipe I', perforated supporting-plates G G, and steam-pressure pipe K, as set forth.

2. In a dye-extractor, the combination, with the cylinder A, of the segmental perforated plates G G, substantially as and for the purpose described.

236,283.—Oil Press. Gilbert M. Venable, Memphis, Tenn. Filed June 7, 1880.

Claim.—1. The oil-press having the spring F seated in the ram or plunger of the hydraulic press and pressing against the lowermost follower, H, for the purpose set forth.

2. The combination, in an oil-press, of the press-boxes G G', having grooves M, and followers H, having grooves M', the plates or mats O O', perforated as shown, and having grooves R on their outer sides, for the purpose set forth.

3. The plates or mats O O', having perforations S, opening into the grooves R on the outside and countersunk or beveled on the inside, substantially as and for the purpose set forth.

4. In combination with the spring-cushions Y, the mats or plates O O', made of sheet-steel, vulcanized rubber, celluloid, or other elastic and flexible material, so as to present a somewhat yielding surface to the seed-bags P, for the purposes set forth.

5. The press-boxes G G', having vertical grooves L, in combination with the removable lining N, having notches or indentations *n* in its upper edge, substantially as and for the purpose set forth.

6. In an oil-press, the elastic cushion X, or equivalent, between the uppermost press-box G', and the top, D, of the press.

7. The wiper, W, of leather, rubber, or equivalent material, attached to one end of the followers and projecting slightly above the same, substantially as and for the purpose set forth.

236,366.—**Paint-Mixing Machine.** Wm. M. Shoemaker, Philadelphia, Pa. Filed May 7, 1880.

Claim.—The combination, in a paint-mixing machine, of a cylinder, A, made in two parts, one fixed, the other removable, the mixing-shaft G, the base B, cast in one piece, and having a central stuffing box bearing for the lower portion of the shaft, the bearing E for the upper part of the shaft, the said bearing being independent of the removable portion of the cylinder, all substantially as set forth.

236,458.—**Discharging Apparatus for Bone-Black Furnaces.**

Edward K. Richards, Brooklyn, N. Y. Filed December 6, 1880.

Brief.—This invention relates to that portion of a bone-black furnace, which receives or measures the bone-black as it falls from the cooling-tubes, and consists in the construction and arrangement of the reciprocating and adjustable discharging-plates and also in the construction of the regulating and adjustable cam and skeleton-frame for operating the discharging-plates, by these means doing away with the measuring-boxes usually employed in such apparatus.

Claim.—1. The adjustable angle-plates D, in combination with the skeleton-frame C, substantially as described.

2. The regulating-yoke L, the suspended lever M, and the regulating-wedge N, in combination with the cam wheel I, and the reciprocating skeleton-frame C, substantially as described.

3. In a discharging apparatus for bone-black furnaces, the combination of the following elements: the cooling tubes A, the suspended base-plate B, the reciprocating skeleton-frame C, the regulating cam-wheel I, the yoke L, the lever M, the wedge N, the adjustable angle plates D, the measuring-plates E, the bars F, and supports H, substantially as described.

236,583.—**Nursing-Bottle Fitting.** Henry H. Hayes, New York,

N. Y., assignor to Goodyear Rubber Company, same place.

Filed May 21, 1880.

Claim.—1. A valve composed of a cylinder of rubber or other suitable material, with a tongue or cone inclosed therein and split to form the valve-opening, substantially as described.

2. The combination, in a valve for nursing-bottle fittings or other purpose, with a small rubber cylinder, of a hollow cone projecting upwardly from the bottom of said cylinder and slit lengthwise in the center, substantially as described.

3. The combination of the nipple, flexible tube and rigid tube with the stopper having a single hole for the passage of said flexible tube, contracted for a short distance to fit the same, and the valve attached to the lower end of said rigid tube, the whole being adapted to operate in connection with a bottle, substantially as described.

236,615.—**Manufacture of Surgical Speculums from Celluloid and Other Compounds of Pyroxyline.** Gustav Otto,

Jersey City, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Nov. 22, 1880.

Claim.—1. A speculum composed of celluloid or other compound of pyroxyline.

2. A speculum composed of celluloid or other compound of pyroxyline of a color which will not absorb light.

236,634.—**Granulated Laundry-Bluing.** Henry Sawyer, Chelsea, Mass. Filed Oct. 3, 1878.

Claim.—The improved laundry-bluing herein described, which consists of bluing or indigo reduced to a granulated form, substantially as set forth.

236,671.—Apparatus for Storing and Drawing Liquids.

Seabird H. B. Cochrane, Tippecanoe City, Ohio, assignor of one-half to William W. Crane, same place. Filed Dec. 6, 1880.

Claim.—1. The combination of the receiving-vessel A, the discharging-vessel B, and the intermediate siphon C, substantially as set forth.

2. The combination of the receiver A and vessel B, constructed to form a stopper for the vessel A, and the intermediate tube, C, arranged in relation to the two vessels, substantially as shown and described.

236,792.—Apparatus for making Infusions or Extracts.

Robert B. Utzensberger, St. Pancras, County of Middlesex, England. Filed Sept. 9, 1880. Patented in England July 17, 1880.

Claim.—1. An apparatus for making infusions and for keeping the same hot for use, consisting of a boiler containing hot water, in combination with infusion boxes G, mounted in receivers B and C, which stand in a tray supplied with warm water from a milk-heater heated by waste heat from the boiler, all substantially as set forth.

2. The box or holder G, having a central descent-tube, E, lower space, G', perforated diaphragm *g*, and perforated lids *g*⁶, for the infusion of tea, coffee and other substances, substantially as described and shown.

3. The steam-boiler A, in combination with the infusing-boxes G, in the receivers B and C, which stand in a tray, J, supplied with warm water from the jacket of a milk-heater, D, heated by waste steam from the boiler, all substantially as set forth.

236,885.—Mineral Paint. Darwin E. Goodell, Germano, Ohio.

Filed April 27, 1878.

Brief.—The mineral substance which forms the base of the paint is found in strata in coal-banks in Harrison county, Ohio, and consists of coaly matter about one-third, and sand and pyrites about two-thirds—or, in one thousand parts, carbon and coal, three hundred parts; residue after ignition, seven hundred parts. This residue contained sesquioxide of iron with blackish crust which was magnetic and silicious, and did not effervesce with hydrochloric acid, but yielded H₂S. This substance, known to the miners as "soot" or "soot-band," is subjected to heat, to purify it, and then ground fine and mixed with oil, varnish or lacquer, to form a paint.

Claim.—A mineral paint composed of a powder made from the described substance known as "soot" or "soot-band," found in strata in coal-banks, mixed with linseed oil or other suitable vehicle, substantially as set forth.

236,940.—Apparatus for Evaporating Solutions in Contact with Air or other Gas.

Jules L. Faesch, Geneva, Switzerland, assignor to Societe Anonyme pour L'Exploitation des Brevets Bicard, same place. Filed August 10, 1880. Patented in France June 15, 1880.

Claim.—1. The process hereinbefore described for utilizing the latent heat of an admixture of air and vapor, which consists in first depriving the mixture of said latent heat by means of a cooling and absorbing agent; secondly, in eliminating from the latter the latent heat absorbed and increasing the temperature of the latter by compression and utilizing the same for heating purposes, substantially as described, and for the purposes specified.

2. The process of evaporating liquids by contact with atmospheric air, which consists, first, in eliminating the vapor from the charged air by means of a cooling and absorbing agent, and employing the air so deprived of heat and moisture in the process of evaporation; secondly, in eliminating the latent heat absorbed by the cooling agent, and increasing its temperature by compression; thirdly, utilizing the latent heat so eliminated and increased in temperature to heat the

liquid to be evaporated, substantially as hereinbefore described, for the purpose specified.

3. In an apparatus for evaporating liquids, more especially adapted for evaporating brine in salt-works, the combination of an evaporating-pan, a cooling vessel, and means substantially as described, for producing a continuous circulation of the combined air and vapors, for cooling said air by depriving it of its latent heat and moisture, and reconducting the air so cooled and dried to the evaporating-pan, substantially as and for the purposes specified.

4. In an evaporating apparatus hereinbefore described, the combination, with the evaporating-pan, the cooling-vessel, the fan, and their respective connections L I K, of a liquid reservoir, an intermediate suction-pump, and the connections N M, arranged and operating substantially as described, for the purpose specified.

5. In an evaporating apparatus, the combination, with an evaporating-pan, a cooling-vessel, an intermediate suction-fan, a liquid reservoir, a suction-pump between the latter and cooling-vessel, and the connections I K L M N, of a heater, and a force-pump between said heater and liquid-reservoir, and the connecting-pipes O P R S, arranged and operating substantially as and for the purposes specified.

236,921.—**Liquid Pond-Lily Soap for Toilet Purposes.** Francis Wright and George W. Wright, Washington, D. C. Filed June 12, 1879.

Brief.—Makes a saponaceous base from vegetable oil or oils, and while making the same, adds an extract from the root and leaves, or from either the root or leaves of the pond-lily. This saponaceous base or compound is incorporated with other ingredients, to make a toilet-wash, in the following proportions: saponaceous base, four pounds; water ten gallons; aqua-ammonia, one gallon; borax, twelve ounces; bicarbonate of soda, one ounce.

Claim.—The toilet-wash described, the same consisting of the extract from pond-lilies, combined with a saponaceous base devoid of animal fats or oils, and with water, aqua-ammonia, borax and bicarbonate of soda, in the proportions substantially as described.

236,982.—**Liquid Cooler.** Matterson F. Capps, Longview, Texas. Filed July 7, 1880.

Claim.—The cooling apparatus herein described, consisting of the vessel A, formed by the walls *a* and *b*, having non-conducting material intervening, as shown, and made into compartments B B C', by the walls or partitions C, and having the pipe G extending through both walls, the air-tight head D, having aperture E, and screw-pipe F, the covers K, containing non-conducting material, and having resting-flanges, as shown, the whole constructed, arranged and adapted to serve as and for the purposes set forth.

236,997.—**Dose-Measuring Bottle.** James M. Dodge, Chicago, Ill. Filed Dec. 20, 1880.

Claim.—A bottle or liquid-receptacle having its main chamber or receptacle supplemented with a measuring receptacle or chamber, into which latter the liquid contents of the bottle may be made to flow, and from which the contained liquid can be discharged through the mouth of the bottle without discharging from the main receptacle of the bottle any portion of its contents.

237,017.—**Paint.** John F. Hoffman, Cincinnati, Ohio. Filed May 8, 1880.

Brief.—Light dead-oil of coal-tar is impure carbolic acid.

Claim.—As a new article of manufacture, a paint, composed substantially as herein described, consisting of the following ingredients in substantially the specified proportions, by weight—namely: ten (10) parts of light dead-oil of coal-tar obtained by distillation and treated with quick-lime, five (5) parts of pale rosin and three (3) parts of asphaltum, dissolved by heat and mixed together, as set forth.

237,007.—**Tanning Compound.** James Foley, Montreal, Quebec, Canada. Filed Nov. 3, 1880.

Claim.—The compound described, consisting of an ooze or solution containing tannic acid, to which the concentrated liquor or extract of the wood of the *Morus tinctoria* is incorporated, as and for the purpose set forth.

237,015.—**Bottle-Stoppering Device.** Balthaser Hegele, San Jose, Cal. Filed Sept. 4, 1880.

Claim.—1. In combination with a double conical bottle-stopper and its shouldered head *d*, the three-spring plunger *C*, having the barb catches *k*, and above the same the packing-box *E* on the plunger stem, substantially as specified.

2. The combination, with the centrally perforated and threaded guide-stem *D*, of the detachable plunger *h* and its three-spring catch, substantially as specified.

3. In a bottle stoppering machine, the combination, with the guide-stem *D* and the stopper-chamber, of the detachable plunger-stem *h*, the three-spring barb-catch, and the packing-box on said stem, having the under connection for the stopper-chamber, as specified.

237,033.—**Apparatus for Feeding Paint Mills.** Heinrich Meinsen, Brooklyn, assignor to J. C. Jessup & Co., New York, N. Y. Filed April 5, 1880.

Claim.—1. The combination, with the paint-grinding mill and mixer, of a feed-pipe and gate, and mechanism, substantially as described, for periodically opening and closing such gate, for the purposes and substantially as set forth.

2. The combination, with the paint-grinding mill and mixer, of a feed-pipe from the mixer, a gate for opening and closing the feed-pipe, a revolving crank-pin for giving motion to the gate, and a rod from the crank to the gate, provided with a device for varying its length, whereby the gate may be opened more or less, substantially as specified.

237,113.—**Apparatus for Recovering Soda from Waste Alkaline Liquor.** Samuel Lee, West Manayunk, Pa. Filed June 8, 1880.

Claim.—1. In an apparatus for recovering soda from the waste alkaline liquor used in reducing vegetable fiber to paper-pulp, a hollow shell surrounding the incinerating hearth, the interior space of which shell is connected by pipes or conduits with the waste-liquor reservoir or evaporating-pan, whereby the said shell by continuous circulation can be kept filled with alkaline liquor to absorb the heat generated in the incinerating-chamber, substantially as described.

2. In an apparatus for recovering soda from the waste alkaline liquor used in reducing vegetable fiber to paper-pulp, the combination of the incinerating-hearth *J*, hollow walls, boxes or drums, *B B', B'', B'''*, and *H*, evaporating-pan *L*, pump *E*, and pipes *F G K K'*, furnished with suitable valves *F' G'*, and cocks *F'' K''* and pipes *M M'* whereby a continuous mechanical circulation of the charge being treated in the pan *L* can be sustained through the walls or hollow boxes and the pan *L* to heat the liquor in circulation and carry off the heat of the incinerating-chamber as it is transmitted through the walls thereof, substantially as described.

237,167.—**Electro-Magnetic Apparatus for Medical Use.** John Butler, New York, N. Y. Filed Oct 16, 1880.

Claim.—1. An electro-magnetic apparatus for medical use, having one electrode formed as a driving-roller, and fitted in a handle for use, substantially as shown and described, and for the purposes set forth.

2. In electro-magnetic apparatus for medical use, the permanent magnet *A*, manipulating-roller *B*, carried by the permanent magnet, and electro-magnet *C*, fitted for rotation by the roller, combined, substantially as shown and described, for operation and use as specified.

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237,437.—**Lubricant.** Hiram Hurty, Elmira, N. Y. Filed April 17, 1880.

Claim.—The lubricant herein described, composed of plumbago and common salt in about equal proportions, finely pulverized and mixed together, substantially as set forth.

237,736.—**Ointment.** Edward Frankford, Lockport Township, Will County, Ill. Filed Nov. 18, 1880.

Claim.—An ointment compounded of mutton-tallow or unsalted butter, rosin, gum pitch (white-pine rosin), honey, beeswax, spirits of turpentine, oil of cumin, oil of rhodium, oil of cedar, oil of hemlock, balsam of fir, and tincture of cantharides, in substantially the proportions above stated.

237,759.—**Manufacture of Hop Extracts.** William A. Lawrence, Waterville, N. Y. Filed July 22, 1880.

Claim.—The herein-described method of extracting the valuable properties of hops by subjecting the hops in a suitable digester to the action of the above-described ethylic and methylic products of an alcoholic radical, at a suitable temperature, and separating the solvent from the extract after saturation by distillation, substantially as specified.

237,816.—**Purifying Sulphate of Alumina.** William Chadwick, Thomas Chadwick, and James Chadwick, Manchester, and Josiah W. Kynaston, Liverpool, county of Lancaster, England. Filed June 2, 1880. Patented in England, Oct. 9, 1879.

Claim.—1. In the purification of sulphate of alumina, alum, or alum-cake, the process of removing the iron therefrom, which consists in adding to the described aluminous solution ferrocyanide of calcium, or other soluble ferrocyanide, until the iron in solution is precipitated, and then precipitating the arsenic by a soluble sulphate, and by this means carrying down the suspended ferrocyanide.

2. In the purification of sulphate of alumina by means of a soluble ferrocyanide, the process of removing the suspended ferrocyanide by the addition of sulphate of copper or sulphate of zinc in small quantity.

237,855.—**Compound for Preserving Food.** Albion P. Gest, Evansville, Ind., assignor of a part to Ronald Fisher, same place, and William H. Scudder, St. Louis, Mo. Filed June 3, 1880.

Claim.—The compound of sulphur, charcoal, and borax for preserving food by fumigation, substantially as set forth and described.

237,861.—**Soap Cake.** John R. Hare, Baltimore, Md. Filed July 26, 1880.

Claim.—1. A cake of soap having a string or other suspensory attachment molded or pressed into the soap, substantially as described, and for the purpose set forth.

2. A cake of soap having an elastic string or other elastic suspensory attachment molded or pressed into the soap, substantially as described, and for the purpose set forth.

237,917.—**Production of Oxychinoline.** Zdenko H. Skraup, Vienna, Austria, assignor to Badische Anilin und Soda Fabrik, Baden, Germany. Filed Jan. 6, 1881.

Claim.—1. As a new article of manufacture, oxychinoline produced by the action of glycerine and sulphuric acid upon a mixture of ortho-nitro-phenol and

ortho-amido-phenol, substantially as described, or by any other means which will produce a like result.

2. The within described process of producing oxychinoline by the action of glycerine and sulphuric acid upon a mixture of ortho-nitro-phenol and ortho-amido-phenol, substantially as described.

237,918.—**Production of Oxychinoline.** Zdenko H. Skraup, Vienna, Austria, assignor to Badische Anilin und Soda Fabrik, Baden, Germany. Filed Jan. 6, 1881.

Claim.—1. As a new article of manufacture, oxychinoline produced by the action of glycerine and sulphuric acid upon a mixture of para-nitro-phenol and para-amido-phenol, substantially as described, or by any other means which will produce a like result.

2. The within described process of producing oxychinoline by the action of glycerine and sulphuric acid upon a mixture of para-nitro-phenol and para-amido-phenol, substantially as described.

238,015.—**Ointment.** Harding Yates, Noble, Ill. Filed May 24, 1880.

Brief.—The metals are melted together and cast as a thin plate, upon which the lard and rosin are mixed until the proportions of the metals desired have been incorporated.

Claim.—The herein-described composition of matter for the treatment of piles, etc., consisting of lard, lead, tin, copper, zinc and rosin, in the proportions specified.

238,064.—**Manufacture of Alkali-Balls.** Minard M. Smith, New York, N. Y. Filed March 29, 1880.

Brief.—Wires are stretched across spherical vertical molds, and the alkali is cast upon them, forming a convenient series for handling. After dipping in a protective bath they are ready for packing.

Claim.—The improved article of manufacture herein described, consisting in a series of coated alkali-balls attached together and traversed by a common wire passing through the entire series, substantially as set forth.

238,082.—**Cork-Cutting Machine.** Frank L. Blair, Alleghany City, Pa. Filed Feb. 24, 1880.

Brief.—The clamp moves in advance of the cutter and clasps the material against the bed, when the cutter advances through the aperture in the clamp.

Claim.—1. The combination, in a machine for cutting corks, of a hollow reciprocating cutter, a pivoted lever for reciprocating the cutter, and a reciprocating clamp connected to the lever which operates the cutter at a point between the fulcrum of the lever and its point of contact with the cutter-spindle, substantially as described.

2. A reciprocating hollow cutter having a central discharging-rod, in combination with a semicircular clamp, open at its lower end, arranged concentric with the cutter, and operating in the front thereof, substantially as and for the purpose described.

3. In a machine for cutting-corks, the combination with a reciprocating cutter and its cutter-block, of the strip-rest *r*, having a pyramidal projection on its upper surface, substantially as and for the purpose specified.

238,237.—**Cerate.** Samuel E. Hyndman, Cincinnati, Ohio. Filed July 24, 1880.

Claim.—The within-described compound for healing, whitening and softening the hands, composed of glycerine, vaseline, pulverized borax, and nitrate of potash, the same to be applied to the inner surface of gloves or mittens, substantially as herein set forth.

- 238,277.—**Process of Obtaining the Perfumes of Natural Flowers by Absorption.** Robert A. Chesebrough, New York, N. Y. Filed March 28, 1877. Patented in France March 23, 1877.

Claim.—1. The improved process of enfleurage herein described, the same consisting, essentially, in steeping natural flowers in vaseline or refined petroleum until the odoriferous principle of the flowers is transferred to or absorbed by the vaseline.

2. As a new article of manufacture, a perfume consisting of vaseline impregnated with the primary odors of natural flowers, substantially as described.

- 238,341.—**Compound for Preserving Wood.** William W. Bunnell, Thomasville, Nebr. Filed Jan. 24, 1881.

Claim.—The herein-described compound for preserving wood, consisting of boiled linseed oil, pulverized charcoal, and pulverized saltpeter, in about the proportions specified.

- 238,445.—**Soap.** Adrian C. Selby, Maysville, Ky. Filed July 30, 1880.

Claim.—The herein-described soap, composed of sal-soda, unslaked lime, soft water, bar-soap, rosin, alum, borax, benzine, salt of lemon, and cream of tartar, combined in the manner substantially as described.

- 238,477.—**Syringe.** Laura M. Adams, New York, N. Y. Filed Nov. 5, 1880.

Brief.—The reservoir to receive back the fluid after it has washed the vagina is of soft rubber, and has a flange at its upper portion which may either pass within the labia or rest against them upon the outside.

Claim.—1. The improved syringe comprising the reservoir E, its flexible rubber cup F, adapted for use both interiorly and exteriorly, as described, the outlet G, the open tube B, secured in said reservoir, and having lugs *k* to retain said reservoir in position, and the injection-tube D, open at its upper end and arranged within the tube B, all constructed and arranged to operate substantially as specified.

2. A syringe combined with reservoir E, provided with a flexible cup F, adapted for use interiorly or exteriorly of the person, substantially as and for the purpose described.

- 238,502.—**Elastic Polisher.** Abraham T. Harper, Portland, Me. Filed July 15, 1880.

Claim.—The herein-described composition of matter, to be used for polishing metallic surfaces which have by rust or other means lost their polish, consisting of emery, rubber and sulphur, in the proportions specified.

- 238,505.—**Paint-Can.** Charles E. Hore, Brooklyn, N. Y. Filed April 21, 1880.

Claim.—A paint-can having hermetically attached to its outer surface a piece of glass or equivalent transparent material, coated on its under side with a specimen of the paint contained in the can, substantially as and for the purpose set forth.

- 238,507.—**Medical Compound.** Joseph Keller, New York, N. Y. Filed Jan. 7, 1881.

Claim.—A medical compound composed of saltpeter, camphor, turpentine, Barbadoes tar, oil of lavender, oil of origanum, and oil of spike, in about the proportions specified.

- 238,543.—**Apparatus for Separating Volatile Oils or Solvents from Fixed Oils.** Homer T. Yaryan, Richmond, Ind. Filed Feb. 24, 1880.

Claim.—The apparatus for the continuous purification of oil, consisting, essentially, of the purifying vessel or column A, having perforated partitions *m*, and cups S, with imperforate bottoms, and pipes I, the blower B, condenser C, and pipe connections, substantially as specified.

- 238,570.—**Baking Powder.**—Charles A. Catlin, Providence, R. I. Filed Nov. 3, 1880.

Claim.—1. A cream of tartar substitute, as described, being a pulverulent preparation free from aluminium compounds, and containing as an active ingredient sulphate of ammonium, substantially as set forth.

2. A baking or effervescent powder comprising, in admixture with alkaline carbonate, a pulverulent preparation, substantially as described, the said preparation containing as an active ingredient sulphate of ammonium, and being free from aluminium compounds, as set forth.

- 238,581.—**Bitters.** Samuel A. Groff, Lancaster, Pa. Filed Dec. 22, 1880.

Claim.—The herein-described medicinal compound or bitters, to be used for all diseases arising from a disordered stomach or a diseased condition of the blood, consisting of the liquid obtained by thoroughly extracting the strength from ground cubebs, elecampane root, buchu leaves, Peruvian bark, soap-wort, slippery-elm bark, serpentaria, quassia, and cinnamon bark, by soaking the proportions specified in cologne spirits.

- 238,613.—**Manufacture of Aluminous Cake.** Conrad Semper, Philadelphia, Pa., assignor to Harrison Brothers & Co., same place. Filed Dec. 7, 1880.

Claim.—The herein-described process of manufacturing a colorless aluminous cake containing iron salts from ferruginous aluminous sulphate, by treating the ferruginous aluminous sulphate with oxalic acid or oxalates of the alkalies, of the alkaline earths, or of the metallic bases, to convert ferric-oxide salts into ferrous-oxide salts in said cake.

- 238,641.—**Apparatus for Drying Oleaginous and other Substances.** George B. Boomer, New York, N. Y. Filed Dec. 31, 1880.

Claim.—1. In a drying and evaporating apparatus consisting of a series of pipes containing feed-screws and surrounded by a steam-heating jacket, the combination therewith of the reservoirs connected alternately with opposite ends of the pipes and having perforated bottoms, with conductors or chutes arranged below said perforated reservoirs, substantially as and for the purpose described.

2. In a drying apparatus, a series of pipes containing feed-screws and arranged one above the other, and provided with surrounding steam-heating jackets, in combination with the reservoirs B, connected with the pipes alternately at opposite ends, and having perforated bottoms *l*, and the conductors or chutes *m*, extending in inclined planes below the perforated reservoirs, all substantially as and for the purpose described.

- 238,680.—**White-Zinc Pigment and Mode of Manufacturing the same.** Thomas Griffiths, Liverpool, County of Lancaster, England. Filed July 14, 1880. Patented in England Oct. 18, 1878.

Claim.—1. The process of making a pigment from materials, such as mixed zinc and barium salts, containing artificially precipitated sulphide of zinc, by

heating the same, mixed with common salt, to a bright red heat, and afterward dissolving out the salt.

2. In the process of making a pigment from zinc sulphide, calcining barium sulphate by heating the same, mixed with common salt, to such a temperature that the common salt shall be partially or wholly fused, and afterward dissolving out the common salt.

3. The combined process of manufacturing pigment from precipitated sulphide of zinc by mixing it with common salt, and calcining it to a heat sufficient to frit or fuse the common salt, without contact of air, washing the calcined mass so as to remove the common salt, and grinding and levigating in the usual way.

4. As a new article of manufacture, the compound consisting of an intimate mixture of calcined barium sulphate and anhydrous zinc sulphide, free from uncombined sulphur and unoxidized by contact with air during calcination, substantially as set forth.

238,806.—**Manufacture of Plumbago Crucibles, &c.** Samuel A. Peto, London, England. Filed Oct. 25, 1880. Patented in England April 23, 1880.

Claim.—The method herein described of rendering plumbago crucibles and other vessels of plumbago damp-proof and non-porous, consisting in giving the same, when hot, one or more coatings of pitch, rosin or analogous gum, and turpentine or methylated spirit, or of an analogue, as described.

238,916.—**Explosive Compound.** Frederick C. Keil, San Francisco, Cal., assignor, by mesne assignment, to the Thunder Powder Company, same place. Filed April 3, 1880.

Claim.—An explosive compound composed of nitro-glucose (dextro glucose made from starch), treated substantially as herein described, nitrate of potash, chlorate of potash, and prepared vegetable fiber, as set forth.

238,980.—**Manufacture of Metallic Compounds from Sulphur and Sulphides.** John B. Spence, London, England. Filed Sept. 20, 1880. Patented in England July 3, 1879, in France Aug. 13, 1879, in Belgium March 13, 1880, and in Italy March 13, 1880.

Claim.—The fusible material which I term "Spence's metal," composed of metallic sulphides and sulphur, as above described, such material being applicable to the various uses above set forth.

238,995.—**Bottle and other Hollow Glassware.** Charles B. Van Syckel, Washington, D. C., assignor to Hannah S. Van Syckel and Robert S. Manning, same place. Filed Nov. 19, 1880.

Claim.—1. A nursing bottle having annular indentations or channels B, and provided with one or more studded elastic bands, D, and a studded bottom cap, C, as set forth.

2. The protecting elastic ring or band D, for bottles or hollow glassware, provided with the studs or projections E, as set forth.

3. The projecting elastic bottom cap, C, for bottles or hollow glassware, provided with one or more rows of studs or projections F, as set forth.

239,089.—**Manufacture of Sulphate of Alumina.**—Jos. H. Eastwick, Philadelphia, Pa. Filed April 22, 1879.

Claim.—1. The hereinbefore-described process of manufacturing sulphate of alumina, by grinding and bolting the halloysite and treating the ground and bolted halloysite with sulphuric acid and hydrate of alumina, substantially as set forth.

2. The hereinbefore-described method of producing sulphate of alumina by combining hydrate of alumina with a mixture of halloysite and sulphuric acid, thereby producing spontaneous ebullition and decomposing the halloysite, substantially as set forth.

239,260.—**Plastics from Petroleum.** Julius I. Livingston, Bloomington, Md., assignor to Warren Chemical and Manufacturing Company, New York, N. Y. Filed Dec. 10, 1879.

Claim.—1. The process of making petroleum-asphaltum by eliminating from the heavy residual product the coke or coke-producing elements by precipitation, followed by distilling, substantially as set forth.

2. As a new article of manufacture, petroleum-asphaltum produced from the heavy residual products of petroleum by precipitation and redistillation, substantially as set forth.

239,331.—**Syringe Apparatus.** Rhodes Lockwood, Charlestown, assignor to Davidson Rubber Company, Boston, Mass. Filed Jan. 24, 1881.

Brief.—A floating check-valve prevents the entrance of air when the fluid is low in the receptacle.

Claim.—1. The vessel *a*, the stopper, the tube *cc'*, provided with the passages *e d*, air-hole *d²* and valve-seat *c²*, and the bulb *i*, its connected tube *l*, and the tube *g* and discharge-pipe *h*, combined with the valve *r* and float and the pivoted carrying-arm *p*, with which the valve and float are loosely connected, the said valve operating to check the outward flow of air from the said bottle when the liquid is nearly exhausted, substantially as described.

2. The vessel *a*, and stopper and tube *cc'*, and valve-seat *c²* therein, combined with the pivoted arm *p*, the loosely-connected valve and its attached float, the valve plugging the seat before the surface of the liquid reaches the level of the opening in the valve-seat, thus preventing the escape of air from the vessel *a*, substantially as described.

3. The combination, with the tube *cc'*, having passage *e* and valve-seat, with the pivoted arm *p*, valve *r*, held loosely by the said arm, and the float *s*, of the fender *w*, to limit the upward movement of the arm *p*, substantially as described.

239,346.—**Process of Obtaining Magnesia.** Carl Scheibler, Berlin, Germany. Filed Jan. 20, 1881.

Claim.—1. The process of obtaining magnesia from limestone, dolomite, magnesite, or other lime and magnesia combinations, by first burning the material and then treating it with a saccharine solution to dissolve out the lime, and removing the magnesia from the other insoluble constituents after precipitation by decantation, filtration, or otherwise.

2. The process of obtaining magnesia from limestone, dolomite, magnesite, or other lime and magnesia combinations, by first burning the material and reducing the caustic product to a pulverulent hydrate by slaking, then treating the pulverulent hydrate with a saccharine solution, and separating the magnesia from the insoluble constituents after precipitation by decantation, filtration, or otherwise, as and for the purpose specified.

229,394.—**Process of and Apparatus for Manufacturing Phosphoric Anhydride.** H. S. Maxim, Brooklyn, assignor, by mesne assignment, to the United States Electric Lighting Company, New York, N. Y. Filed May 8, 1880.

Claim.—1. The process, hereinbefore described, of making phosphoric anhydride, which consists in bringing together a jet of vapor of phosphorus and a continuous blast of air of sufficient volume to oxidize all such phosphorus to its highest equivalency.

2. The combination of the injector *G* and pipe *a* with the blower *E* and vessel *A* and the burners *H* and *I*, arranged substantially as described.

- 239,398.—**Process of Preparing Absorbent Cotton.** Jennie E. Pierce, Lewiston, Me. Filed Jan. 18, 1881.

Claim.—The method of preparing cotton as an absorbent for surgical purposes, consisting in subjecting the raw cotton first to a bath of quicklime and soda-ash dissolved in water, and boiling in this, then rinsing in clean water and immersing in a solution of chloride of lime, again rinsing, immersing in a solution of sal-soda, rinsing, drying and carding, substantially as set forth.

- 239,423.—**Treating Pyroxyline.** Leonard S. Beals, Long Island City, N. Y., assignor to the Ceroxylon Company, same place. Filed Oct. 2, 1880.

Claim.—1. The process herein described of treating pyroxyline and similar substances, by dissolving them in a compound of mirbane, oil of lavender, benzole, and alcohol, substantially as specified.

2. The process herein described of treating pyroxyline and similar substances, by first reducing the pyroxyline to a pasty mass by dissolving it in a compound of mirbane, oil of lavender, benzole, and alcohol, and then adding olibanum frankincense, with or without paraffine or vegetable wax, substantially as specified.

3. The process herein described of treating pyroxyline and similar substances, consisting in mixing with the same olibanum frankincense, with or without paraffine, or vegetable wax, whereby the pyroxyline is rendered plastic without the liability of subsequently shrinking and warping, substantially as specified.

- 239,424.—**Preparing Pyroxyline.** Leonard S. Beals, Long Island City, N. Y., assignor to the Ceroxylon Company, same place. Filed Oct. 5, 1880.

Claim.—1. The process herein described of treating pyroxyline and similar substances, consisting in dissolving them in compound of mirbane, essential oil of lavender, benzole, and alcohol, and adding paraffine to render them plastic, substantially as described.

2. The process herein described of treating soluble pyroxyline and similar substances, consisting in rendering the same permanently plastic under heat by mixing therewith paraffine dissolved in mirbane and the essential oil of lavender, substantially as specified.

- 239,425.—**Preparing Pyroxyline.** Leonard S. Beals, Long Island City, N. Y., assignor to the Ceroxylene Company, same place. Filed Oct. 5, 1880.

Claim.—1. The process herein described of treating pyroxyline acid and similar substances, consisting in mixing with the same vegetable wax, either with or without the addition of paraffine, substantially as specified.

2. The process herein described of treating pyroxyline and similar substances, consisting in dissolving the same in a compound of mirbane, oil of lavender, benzole, and alcohol, and then adding vegetable wax, either with or without paraffine, substantially as specified.

- 239,581.—**Stopper with Pad for Medicine Bottles.** Wm. N. Wells, Boston, Mass. Filed Oct. 28, 1880.

Brief.—Upon pressure the pad delivers a certain number of drops, the number depending on the size of the pad.

Claim.—1. As an improved article of manufacture, the herein described stopper, consisting of the body A, provided with the shield B, and absorbing pad a, which has a predetermined absorbing and delivering capacity, said pad being attached to the bottom of the stopper, substantially as and for the purpose specified.

2. The combination, with the cork or stopper A, of the absorbing-pad a, having a predetermined absorbing and delivering capacity, substantially as and for the purpose specified.

239,602.—**Baking-Powder.** Charles A. Catlin, Providence, R. I. Filed Feb. 18, 1881.

Claim.—1. A cream of tartar substitute as described, being a pulverulent preparation free from aluminium compounds, and containing as an active ingredient sulphate of magnesium, substantially as set forth.

2. A baking or effervescent powder comprising, in admixture with alkaline carbonate, a pulverulent preparation, substantially as described, the said preparation containing as an active ingredient sulphate of magnesium, and being free from aluminium compounds, as set forth.

239,667.—**Manufacture of Bronze Powder.** Leopold Brandeis, Brooklyn, N. Y. Filed Feb. 19, 1881. Original No. 53,563, dated April 3, 1866.

Claim.—1. The above-described process of making bronze-powder—viz., the production of shavings or scrapings from an ingot of metal by means of a lathe-tool or its equivalent, and the subsequent flattening and polishing of the same by means of stamps and rollers, and pulverizing the same by grinding mechanism, substantially as described.

2. In the manufacture of bronze-powder, the production of fragments by shaving or scraping from an ingot of alloy particles of metal adapted to pulverization and polishing, and the flattening and breaking of the same by stamps, preparatory to pulverization and polishing by the usual methods.

3. In the manufacture of bronze powder, the process of polishing the metal while in a fragmentary state by subjecting the particles obtained as above described to the action of polished steel or chilled iron surfaces preparatory to the final comminution thereof, substantially as described.

239,734.—**Fabric for Making Packages for Spices, &c.**—Henry C. Crocker, Milwaukee, Wis. Filed May 13, 1880.

Claim.—A paper fabric for the manufacture of waterproof packages that consists of three layers of paper, the middle one of which is waterproofed, the other layers being pasted together at their edges around the waterproof layer to inclose it, as shown and described.

239,828.—**Oil and Liquid Pump.** Ellen Augusta Nichols (Administratrix of Francis Nichols, deceased), Wolcott B. Manwaring, and Olin L. Livesey, New London, Conn., assignors to Acid Pump and Siphon Company, same place. Filed July 7, 1879.

Claim.—1. An oil or liquid pump composed of an initial receiving-chamber, A, provided with an induction-pipe and a valve and a collapsible bulb, C, and a final discharge chamber D, arranged within the former, so that there shall be space above and around it, and provided with a valve and eduction-pipe, the chamber and bulb being arranged and of such relative dimensions, substantially as set forth, that the liquid will first enter chamber A and then chamber D, without passing into bulb C, as and for the purpose set forth.

2. In an oil or liquid pump, the combination of the chamber A and collapsible bulb C, located, substantially as described, with chamber D, having an arched or curved top, the whole constructed and arranged as set forth, whereby the liquid is prevented from swashing and entering bulb C, and the air is distributed on all sides of chamber A, substantially as set forth.

3. In an oil or liquid pump, the chamber D, constructed with an arched or curved top for the purpose of distributing air on all sides of such chamber and facilitating the flow of any liquid from off it.

4. In an oil or liquid pump composed of the two chambers A and D, the combination of a collapsible bulb, C, and a perforated plate located between the tops of the two chambers, as and for the purpose set forth.

5. In an oil or liquid pump, the combination of chamber A, chamber D inclosed therein, collapsible bulb C, and a device located between the tops of the

two chambers, adapted to uniformly distribute air over the surface of the liquid, substantially as described.

6. In an oil or liquid pump, the combination of chambers A and D, the latter being located within the former, and both provided with puppet-valves, the collapsible bulb C, and eduction-pipe E, provided with stop-cock F, the several parts being arranged as shown, to operate as described.

239,912.—**Bottle-Wrapper and Material Therefor.** Harry C. Yokum and Martin V. Kacer, St. Louis, Mo. Filed Sept. 17, 1880.

Claim.—A bottle-wrapper consisting of thin wood having corrugations whose lines of cut cross the grain of the wood, substantially as described.

239,948.—**Cleaning and Preparing Spanish Moss.** Alfred Fellows, Maquoketa, Iowa. Filed Dec. 1, 1880.

Claim.—The process of treating moss in a liquor made of carbonate of soda and soda-ash, in equal parts, and water, in the proportions and in the manner substantially as and for the purposes described.

239,974.—**Indelible Ink.** Aaron N. Morse, Milwaukee, Wis., assignor of one-half to Thos. Ballentine and G. Maxon, same place. Filed Sept. 9, 1880.

Claim.—A compound consisting of pure soft water, caustic (stick) potash, seed-lac, permanganate of potassium, and lamp-black, in the proportions and substantially as and for the purpose set forth.

240,086.—**Syringe.** James Burbridge, Robert C. Thorpe, and Thomas Oakley, Tottenham, County of Middlesex, England. Filed Dec. 30, 1880. Patented in England May 5, 1880, and in France Sept. 16, 1880.

Claim.—A syringe having flexible tubes and having its valve or valves composed of flattened and collapsible portions of the sides of said tubes, substantially as specified.

240,150.—**Salve.** Aquilla T. Lawrence, Idaho Springs, assignor of one-half to John W. Gilbert, Georgetown, Colo. Filed Nov. 3, 1880.

Claim.—The herein-described composition of matter to be used for curing saddle or harness galls, diseases of the hoof, and sores, consisting of rosin, lard, gum-camphor, white gum-turpentine, sugar of lead, sulphate of zinc, and fresh hens' eggs, in the proportions specified.

240,244.—**Oil-Can.** Henry Flynt, Jr., St. Louis, Mo., assignor, by mesne assignment, to himself and Dudley H. Flynt, same place. Filed May 20, 1880.

Claim.—1. The oil-can consisting of the body A, its top face, A', lapped over the flanged face of the body, the separate metal strip B, having its lower bead, b, inclosing the joint of the top face to the body of the can, while the remaining portion of said strip constitutes the outer vertical curvilinear face, the cover C, consisting of the back c, the half-round front face c', the inclined and curved front c², and the top c³, said cover hinged centrally at c⁴, all said parts combined to operate as and for the purposes set forth.

2. The oil-can A, its top face A', having opening e, slit e', flange or pump-seat e², circular rim e³, the pump having unequal diameter of upper and lower sections, the funnel E, its circular rim ex, and cleat or lug e⁴, all said parts combined and arranged to operate as and for the purposes set forth.

240,196.—**Preparation of Hydrochloric Acid.** Ernest Solvay, Brussels, Belgium. Filed June 9, 1880. Patented in England, Feb. 25, 1880.

Claim.—1. The process of obtaining hydrochloric acid in a dry state, consisting in absorbing it, or the vapors thereof, in a solution of chloride of calcium, and then subjecting such solution to heat to vaporize the acid, substantially as described.

2. The process of obtaining hydrochloric acid in a dry state from solutions of the same, consisting in adding chloride of calcium to such solutions for the purpose of retaining the water, and then applying heat to remove the acid, substantially as described.

240,248.—**Process of and Apparatus for Concentrating Sulphuric Acid.** Julius Gridley, Brooklyn, N. Y. Filed Jan. 21, 1881.

Claim.—1. The process herein described of concentrating sulphuric acid, which consists in applying a strong heat to the under surface of a thin body of the dilute acid, and at the same time applying a strong blast of superheated steam, or highly heated air, to the upper surface in a close flue and driving off all vapors as they rise, substantially as set forth.

2. An apparatus for concentrating sulphuric acid, consisting of the under flue B, provided with the adjustable sliding covers C, the upper flue made of tiles G, the pans E, pipe M, and pipes I, J and L, when constructed and arranged to operate substantially as herein described and shown.

240,359.—**Manufacture of Artificial Indigo.** Adolph Baeyer, Munich, Bavaria, and Heinrich Caro, Mannheim, Baden, Germany, assignors to the Badische Anilin und Soda Fabrik, Mannheim, Baden, Germany. Filed Feb. 15, 1881.

Claim.—1. As a new article of manufacture, the blue dyestuff or coloring matter having the properties above stated.

2. The within-described process for producing dyestuffs or coloring matters by the deoxidizing action of an alkaline xanthate upon an alkaline compound of orthonitrophenylpropionic acid, substantially as described.

240,360.—**Dyeing Fabrics with Artificial Indigo Blue.** Adolph Baeyer, Munich, Bavaria, and Heinrich Caro, Mannheim, Baden, Germany, assignors to the Badische Anilin und Soda Fabrik, Mannheim, Baden, Germany. Filed Feb. 15, 1881.

Claim.—The within-described process for developing blue colors or dyes belonging to the class of artificial indigo-blue in or upon a textile fiber, yarn, or cloth, whether knit or woven, by impregnating said fiber, yarn, or cloth with a solution of a mixture of orthonitrophenylpropionic acid and alkali and a deoxidizing sulphur compound belonging to the class of sulpho-carbonates, such as xanthates of soda, and then submitting the fiber, yarn, or cloth to a drying or aging process, substantially as set forth.

2. As a new article of manufacture, textile fibers, yarn, or cloth, whether knit or woven, having the herein-described blue color developed within and upon the same.

240,361.—**Manufacture of Artificial Indigo.** Adolf Baeyer, Munich, Bavaria, Germany, assignor to the Badische Anilin und Soda Fabrik, Mannheim, Baden, Germany. Filed Feb. 15, 1881.

Claim.—1. As a new article of manufacture, the blue dyestuff or coloring-matter having the properties hereinbefore described.

2. The within-described process for producing a dyestuff or coloring-matter by treatment of artificial indigo described in Patent No. 235,193 with sulphuric acid and subsequent precipitation with common salt (chloride of sodium), substantially as herein set forth.

240,382.—**Insect-Killing Liquid.** John Callanan, Brooklyn, N. Y. Filed April 28, 1879.

Brief.—Mixes with water sixteen hundred pounds of lime, one hundred pounds of potash, twenty-five gallons of crude petroleum, and eight hundred and ten pounds of sulphuric acid, to be used for destroying insects, &c.

Claim.—The herein-described compound, consisting of water, lime, potash, crude rock-oil, and sulphuric acid, all united substantially in the manner and in the proportions specified, for the purposes and objects named.

240,516.—**Method of Handling Nitro-Glycerine.** Lafayette Hinckley, San Francisco, California, Frances G. Treadwell, same place, administratrix of said Hinckley, deceased. Filed November 23, 1880.

Claim.—The mode or method of rendering nitro-glycerine and compounds containing nitro-glycerine, non-explosive by ordinary shocks or jars, consisting in confining it in closed vessels, tubes, cartridges, or shells under pressure, substantially as above specified.

240,570.—**Method of Preservation of Fruit Juices.** Clarence A. Axline, Fultonham, Ohio. Filed December 27, 1880.

Claim.—The method described for preservation of fruit juices, consisting in boiling the juice of the grape before fermentation has taken place, skimming off the scum, filtering through a compound composed of charcoal, crushed mustard seed, and ground sassafras root, then boiling the wine a second time, and then bottling, substantially as described.

240,576.—**Turpentine Box and Trough.** Montraville Cooper, Columbia, S. C. Filed Dec. 1, 1880.

Claim.—The combination with the triangular box C, formed as described, and having a flange *d*, of the V-shaped trough B, having a flange *b*, constructed and arranged to operate as set forth.

240,597.—**Manufacture of Aluminous Cake.** George T. Lewis and Carl V. Petraeus, Philadelphia, Pa. Filed Dec. 2, 1880.

Claim.—The herein-described process of purifying a ferruginous aluminous solution, which consists in precipitating the iron of the Prussian blue remaining in the last portions of the aluminous liquor to which yellow prussiate of potassa has been previously added by treating said liquor by adding thereto metallic zinc, oxide of zinc, or zinc ore, substantially as described.

240,638.—**Furnace for Melting Glass.** Thos. B. Atterbury, Pittsburg, Pa. Filed March 26, 1881.

Claim.—1. A pair of heat-generators, each embracing in its construction a gas-combustion chamber outside the direct line of draft from the fire to the working-chamber flues, in combination with an interposed working-chamber or working chambers, suitable for containing batch or other material to be heated, melted or treated, and heat conduits or passages leading from such heat-generators toward each other over such working-chamber or chambers, substantially as set forth.

2. In combination with a series of two or more open-topped, close-sided working chambers, arranged in close proximity and beneath a common roof or

arch, a heat-generating apparatus at each end of the series, and heat and flame conduits thence to a common intermediate flue or flues, substantially as set forth.

3. A series of pillars, *b'*, built in the otherwise open throat of a bridge-wall passage, in combination with a system of flues, *e e'*, in the bridge-wall, and jet-openings from the latter into the spaces *b²*, between the pillars, substantially as set forth.

4. The gas combination chamber *A²*, arranged immediately over the fire and cooking chamber *A'*, without any intervening partition, having an arched roof and lying above the level of the passages leading thence to the working chamber, substantially as set forth.

5. In combination with combustion-chamber *A²*, lying above the level of the passages leading therefrom, a system of flues, *c c'*, in the wall of the fire and cooking chamber, and a series of jetholes, *s*, opening into the chamber *A²* at a level above that of the exit flues or passages, substantially as set forth.

6. In combination with end heat-generators, intermediate working-chambers, and communicating passages, a front and rear escape-flue, *n n'*, substantially as set forth.

7. The combination of two end heat-generators, a series of two or more intermediate working-chambers subject to heat from the generators, a system of pipes for supplying oxygen to the combustion-chambers and bridge-wall throats, and a system of dampers or valves for controlling the oxygen supply through the pipes *p p' p²*, and the escape through the wash-flue *n'*, substantially as set forth.

8. The slanting test-hole *z* in the wall of a tank glass-melting furnace, substantially as set forth.

240,746.—**Fire-Proof Paint.** Orion B. Mellick, Bloomsburg, Pa.
Filed February 7, 1881.

Claim.—The herein-described compound or composition of matter, consisting of coal tar, sulphuric acid, gum of india rubber, boiled linseed oil, benzine, oxide of iron, cement and lime, substantially in the proportions hereinbefore specified.

240,759.—**Effervescing Phosphated Tonic Beverage.** Clemmons Parish, Philadelphia, Pa. Filed March 29, 1881.

Brief.—Adds one part of Parrish's Chemical Food to twelve parts aerated or carbonated water, with sufficient coloring and flavoring matter to render the mixture palatable and properly colored. The bottles are closely corked, placed in a warm room, and occasionally agitated, "to become modified by time."

Claim.—The beverage herein described, consisting of the phosphate and iron elements of Parrish's Chemical Food, aerated or carbonated water, and flavoring and coloring matter, in the proportions named, bottled, securely corked, and aged, substantially in the manner hereinbefore specifically set forth.

240,761.—**Composition for Roofs, &c.** Dorwin D. Pennoyer, Dover, N. H., assignor to himself and C. F. Whiteher, same place.
Filed March 17, 1881.

Claim.—The herein-described composition for roofs, etc., consisting of coal tar, india-rubber dissolved in naphtha, asphaltum or black varnish, bright varnish, and muriatic acid mixed together in about the proportions named, and used with or without sand or gravel, substantially as and for the purpose set forth.

240,855.—**Manufacture of Glue.**—Friedrich Seltram and Richard Hagen, Forchheim, Bavaria, Germany. Filed March 25, 1881.

Claim.—1. The process of converting the glue-containing tissues of bones into glue, by macerating the refuse of bone mills or finely comminuted bones with an organic acid in solution, preferably oxalic acid, as described.

2. The process of converting the glue-containing tissues of bones into glue, by treating the refuse of bone mills or finely comminuted bones with an organic acid in solution, and heaping the materials so treated until slightly heated, as set forth.

3. The process of converting the glue-containing tissues of bones into glue, by first macerating the refuse of bone-mills of finely-comminuted bones with an organic acid in solution, as set forth, then driving off the ammoniacal constituents by means of steam, as described.

4. The process of converting the glue-containing tissues of bone into glue, by macerating the refuse of bone-mills or finely-divided bones with an organic acid in solution, driving off the ammoniacal constituents of the macerated bones by means of steam, and dissolving out the glue-tissues by means of steam under pressure, all substantially as hereinbefore set forth.

5. The process of obtaining glue from bones by macerating the refuse of bone-mills or finely-comminuted bones with an organic acid in solution, driving off the ammoniacal constituents not neutralized by maceration, by means of steam, dissolving out the glue-tissues by means of steam under pressure, to obtain a concentrated solution, and finally removing or dissolving out the remaining glue-tissues by means of hot water under pressure, all substantially in the manner as set forth.

6. The process of obtaining glue from finely-comminuted bones or the refuse of bone-mills, by maceration with a solution of an organic acid, expelling the ammoniacal constituents, dissolving out the glue by means of steam under pressure to obtain a concentrated glue solution, forcing hot water under pressure into the bones to wash out the remaining glue, and finally expelling the watery glue-solution by means of air under pressure, and evaporating to the proper consistency, all substantially as and for the purposes set forth.

7. In the process of manufacturing glue from bones, comminuting or shredding the bones before extracting the glue therefrom, substantially as and for the purpose specified.

240,899.—**Slate-Roofing Paint.** Jacob L. Fauss, North Bristol, assignor of one-half to Edwards W. Laird, Cleveland, Ohio. Filed May 8, 1880.

Brief.—The residue of coal-tar after distillation of a crude benzole and dead or stale oil therefrom forms, with the distillates named, the bulk of the paint. The color is a light slate or reddish brown, according as the pulverized slate or the ore preponderates.

Claim.—The herein described composition of matter to be used for coating roofs, consisting of residue of coal-tar, ground hematite ore, ground slate, crude benzole, and dead or stale oil or crude carbolic acid, in the proportions specified.

240,941.—**Manufacture of Artificial Indigo.** Adolph Baeyer, Munich, Bavaria, Germany, assignor to Badische Anilin und Soda Fabrik, Mannheim, Baden, Germany. Filed March 9, 1881.

Brief.—A blue coloring-matter or artificial indigo prepared from isatine-chloride.

Claim.—1. As a new article of manufacture, the blue dye stuff or coloring matter produced from isatine-chloride, having the qualities herein specified

2. The within-described process for producing a blue dye-stuff or coloring-matter by exposing isatine-chloride to the action of glacial acetic acid and zinc-dust, or other reducing agents, substantially in the manner set forth.

240,942.—**Manufacture of Artificial Indigo.** Adolph Baeyer, Munich, Bavaria, and Adolph Emmerling, Kiel, Prussia, Germany, assignors to Badische Anilin und Soda Fabrik, Mannheim, Baden, Germany. Filed March 9, 1881.

Brief.—A blue coloring matter or artificial indigo prepared from isatine.

Claim.—1. As a new article of manufacture, the blue dye-stuff or coloring matter herein described, and having the properties set forth.

2. The within described process for producing a dye-stuff or coloring matter by the action of a mixture of phosphorous-trichloride and acetyl-chloride with yellow phosphorus on isatine, substantially in the manner set forth.

240,959.—**Cataplasm or Poultice.** Stephen Brown, New York, N. Y. Filed Jan. 13, 1881.

Claim.—A cataplasm or poultice consisting of a fabric coated or impregnated with gelatine, glycerine, Irish moss, extract of bark of European larch, gum tragacanth, mucilage of flaxseed, and mucilage of slippery-elm bark, in proportion substantially as set forth.

240,966.—**Pill-Rounding Machine.** George F. Chappell, New York, N. Y. Filed Feb. 2, 1881.

Claim.—1. In a pill-rounding machine, the combination of an eccentric plate and a concentric plate arranged to revolve with pills between them, substantially as herein described.

2. In a pill-rounding machine, the combination, with a concentric driving-pulley, of a circular plate F, arranged eccentrically with relation to said pulley by means of a pivot *f*, socket *k*³, and set-screw *k*⁴, and adapted to move with a sweeping motion only, or with a combined sweeping and circular motion, substantially as herein described.

3. In a pill-rounding machine, the combination, with an eccentric plate, arranged as described, of a concentric plate E, provided with means for holding it stationary, for rotating it, for vertically adjusting it, and for regulating its pressure, substantially as herein set forth.

4. The combination, with the shaft D, provided with the grove M, of the pulley *d*, provided with a stud or key for engagement with said groove, the cross-bar C, and bracket *c*, forming bearings for said shaft and a seat for said pulley, and the spring *n* and nut N, for regulating the pressure of the plate, substantially as herein described.

5. The combination, with the plates E and F, of the pulleys K, *b*², *b*³, and *d*, shafts *b* and D, and belts *b*⁵ and L, arranged as shown, for the purposes specified.

240,995.—**Apparatus for the Manufacture of Sodium Carbonate.** Moritz P. J. Gerstenhofer, Friedeburg, near Freiburg, Saxony, Germany. Filed Oct. 29, 1879.

Claim.—1. In an apparatus for the manufacture of monocarbonate of soda, the combination of the brine-tank A, the coke-tower B, the reservoir C, the universal apparatus D, and the ammonia and carbonic acid generators, connected by suitable pipes having air-tight connections, the whole constructed and arranged to operate substantially as and for the purposes specified.

2. In combination with the brine-tank, coke-tower, reservoir, universal apparatus, and the ammonia and carbonic-acid generators, the agitators I, suitable pipes for connecting the latter with said universal apparatus, the pressure tanks K, and pipes for connecting with the said agitators and the centrifugal machines L, and pipes for connecting the latter with said pressure tanks, whereby the said agitators are adapted to receive the precipitate from the generator for the purpose of mixing it more thoroughly with, and then draining off most of the chloride of ammonia liquor from the same, substantially as specified.

3. In combination with the brine-tank, coke-tower, reservoir, and universal apparatus, and the ammonia and carbonic acid gas generators, the agitators and pressure-tanks K, the latter being connected by suitable pipes and air-tight connections with the primary heater H, whereby the chloride of ammonia formed and any carbonic acid contained in solution therein may be transferred to the heater H, wherein the carbonic acid and chloride of ammonia are separated for further use, substantially as specified.

4. In combination with the brine-tank, coke-tower, reservoir, and universal apparatus, and the agitators, pressure-tanks K, and centrifugal machines L, the calcining apparatus to receive the bicarbonate of soda, leaving the centrifugal machine for the purpose of calcining said bicarbonate and converting it into monocarbonate of soda, substantially as described.

5. In an apparatus for the manufacture of monocarbonate of soda, the combination, with the still E, of the feeding apparatus consisting of the cylinder E², inclosed vessel E³, and the feed-screw *e*, operated by a rod extending through the wall of said inclosed vessel, substantially as described.

6. The combination with the still, of the branch pipe extending within said still to near the bottom thereof, and terminating in a coiled portion provided with a number of projecting nozzles e' , bent at right angles to discharge tangential jets, whereby a rapid circular motion is imparted to the liquor to prevent a collection of sediment at the bottom of the still.

7. In combination with the retort G' , and its feed mechanism, the chamber G and air-tight discharge mechanism, consisting of the inclosed hopper g^2 and the fluted roller g^3 , working in close contact with the wall of the said hopper on each side of its discharge-opening, and adapted to operate substantially as and for the purposes specified.

249,715.—**Process of Obtaining Isinglass.** Isaac Stanwood, Gloucester, Mass. Filed April 15, 1878. Original No. 177,764, dated May 23, 1876.

Claim.—1. In the process of obtaining gelatine from salted fish-skins, the method of producing a purified solution of gelatine, which consists in desalting the salted fish-skins, boiling them in water and straining the solution, or separating from it the superfluous matter or matters, substantially as set forth.

2. In the process of obtaining gelatine from salted fish-skins, the method of producing a solution of gelatine, which consists in desalting the salted fish-skins by soaking them in water, and then putting the skins in fresh water and boiling them, substantially as set forth.

3. The process, substantially as described, of obtaining gelatine from salted fish-skins, it consisting in desalting and boiling them, separating from the gelatinous solution so obtained the superfluous matter or matters, and reducing it (the solution) by evaporation to the necessary consistency for use, substantially as set forth.

4. The process of obtaining sheet-isinglass from salted fish-skins; which consists in soaking them in fresh water, boiling and straining off the liquid, causing it to evaporate to a compact mass, cutting it in slices, and afterward drying the slices, substantially as set forth.

241,014.—**Medical Compound.** Wm. H. Holland, Chelsea, Mass. Filed Dec. 31, 1880.

Claim.—The described compound or medicated malt beer, composed of malt beer and the following medical ingredients, substantially in the proportions specified: dandelion, thoroughwort, prickley-ash bark, iodide of potassium and bromide of potassium.

241,030.—**Preserving Cottonseed and Cottonseed Oil.** Felix R. Lanier, Memphis, Tenn. Filed Oct. 6, 1880.

Claim.—The process for shipping, or for preserving for shipment and other purposes, cottonseed kernels, cottonseed cake, and cottonseed oilmeal, by submerging the same in cottonseed oil, substantially as described.

241,144.—**Medical Compound.** Abraham Lange, Chicago, Ill. Filed May 17, 1880.

Claim.—The medical compound or mixture composed of a decoction of the following ingredients: Indian-hemp, spikenard, blackberry-root, mullein, mountain horehound, common horehound, horse-mint, dittany, dewberry-root, galanga, smart-weed, pennyroyal, and extract of cole-root, mixed with water and alcohol, in about the proportions set forth.

241,202.—**Manufacture of Glucose.** Ambrose G. Fell, New York, assignor to William H. Smith, Urbana, Ill. Filed June 11, 1880.

Claim.—1. The method of converting starch into glucose by subjecting the same to the action of nitrosulphuric acid, substantially as described.

2. The method of making from grain a saccharine solution by treating the grain, in a form containing substantially all the elements thereof, with nitrosulphuric acid at temperatures as indicated, in order to prevent the solution of the gluten, or the carbonization of the same, or of the woody fiber, as set forth.

3. In the preparation of glucose or syrup from grain, the method of treating the saccharine solution, after the conversion of the starch and separation of insoluble matters of the grain, by introducing into the boiling liquid, in vacuum pans, sulphurous-acid gas, substantially as described.

4. The method of manufacturing commercial glucose or syrup from grain by treating the grain in a form containing substantially all the elements of the grain, with nitro-sulphuric acid, at the temperatures indicated, until the starch is converted into glucose, neutralizing the acid in the liquor, separating the saccharine solution from the gluten or nitrogenous elements and the undissolved portion of the grain, so that they may be utilized as explained, concentrating said saccharine solution by boiling in vacuum pans, and introducing sulphurous-acid gas during the operation, removing the precipitated salts, and extracting the sulphurous-acid and finally reducing, when necessary, the syrup to the desired consistency, substantially as described.

5. The herein described syrup or glucose, containing substantially all the native saccharine elements of the grain, and being practically free from gluten, and the charred products of gluten, or of woody fiber, as set forth.

241,288.—**Process of Making Compounds for Treatment of Piles.** Alexander W. Brinckerhoff, Upper Sandusky, Ohio. Filed Dec. 4, 1880.

Claim.—The herein described process of compounding a mixture for the treatment of piles and the like, consisting in first placing in an open-mouthed vessel, to about two-thirds of its capacity, sperm-oil, glycerine, or a similar vehicle, surrounding the vessel with crushed ice, salt, and water until the vehicle is reduced to a temperature of 24°, or thereabout, and then pouring in carbolic acid in a liquid form until feathery crystals appear in the vehicle, as set forth.

231,383.—**Perfumed Caustic Soda.** George T. Lewis, Philadelphia, Pa. Filed Oct. 19, 1880.

Brief.—Adds to granulated or pulverized caustic soda an essential oil in the proportion of one pound of the alkali and from ten to thirty drops of the essential oil.

Claim.—As a new article of manufacture, perfumed, granulated or pulverized caustic soda, possessing the qualities and characteristics herein specified.

241,398.—**Mordant.** Samuel Mellor, Patricroft, County of Lancaster, England. Filed Dec. 10, 1880. Patented in England, May 5, 1880.

Claim.—The within-described fixing agent for dyes or colors, said agent consisting, essentially, of stibio-fluorine salts, substantially as set forth.

241,469.—**Soap.** James Wright, Charleston, Ill. Filed March 3, 1881.

Claim.—The within described compound soap, consisting of soap, either hard or soft, alum, borax, sal-soda, lime, benzine, alcohol, glycerine, rosin and palm-oil, in about the proportions named.

241,486.—**Lozenge, &c.** Clement E. Gardiner, Birmingham, England, and Alfred Hodge, New York, N. Y. Filed Apr. 19, 1881.

Claim.—1. A lozenge or other confection containing glycerine in connection with gelatine, substantially as described.

2. In a lozenge or other confection, the combination of gelatine and sugar in substantially equal proportions, as set forth,

- 241,505.—**Jellifying Petroleum and other Substances Insoluble in Water.** Cyprien Tessie Du Motay and August J. Rossi, New York, and Alexandre Bourgougnon and Paul Casamajor, Brooklyn, N. Y.; Algernon S. Sullivan, administrator of said Du Motay, deceased. Filed Feb. 19, 1880.

Brief.—The inventors' process is adapted to be used in connection with petroleum, kerosene, benzine, naphtha, turpentine, bisulphide of carbon, chloroform, linseed and olive oils, and other substances similarly practically insoluble in water, for reducing these liquids to a jelly-like consistence, while for their thickening agent gelatine, flour paste, gluten and equivalent substances are enumerated.

Claim.—1. The mode described of jellifying petroleum and other substances insoluble in water, as above described, the same consisting in adding such substance gradually, while agitating, as described, to a solution of gelatine or its described equivalent until a jelly-like product is secured, substantially as set forth.

2. The product obtained by the above process, consisting of the jellified substance resulting from the admixture, under agitation, of petroleum or other suitable substances described as insoluble in water, and a solution of gelatine or described equivalents.

- 241,576.—**Adhesive Compound.** Nelson S. White, Canton, Mass. Filed Jan. 28, 1880.

Brief.—This compound may be used as a cement between non-metallic surfaces, or for rendering such surfaces water-proof.

Claim.—An adhesive compound or cement composed of silicate of soda, carbonate of lime, carbonate of magnesia, chloride of sodium and albumen, substantially as described.

- 241,640.—**Paint Compound.** Augustus M. Fenner, Linesville, Pa. Filed Feb. 7, 1881.

Claim.—The herein-described improved paint compound, consisting of india-rubber, benzine, linseed-oil, spirits of turpentine, water, unslaked lime, sugar of lead, sulphate of zinc, white lead and oxide of zinc, in about the proportions and for the purpose set forth.

- 241,666.—**Method of Obtaining Starch from Indian Corn and other Grain.** Thomas A. Jebb and William T. Jebb, Buffalo, N. Y. Filed Feb. 3, 1881.

Claim.—1. As an improvement in the art of obtaining starch from grain, the method of reducing the grain by whipping or beating it together with a stream of water until the bran and gluten are reduced to coarse fragments, when the starchy portions of the grain are finely pulverized, whereby the starch is loosened and washed from the fragments of bran and gluten, substantially as set forth.

2. The method of obtaining starch from grain, which consists in reducing the grain by whipping or beating it together with a stream of water until the bran and gluten are reduced to coarse fragments, when the starchy portions of the grain are finely pulverized, then agitating the reduced grain, whereby the gravity of the liquid mass is rendered uniform, and then separating the starchy liquid from the bran and gluten by sifting, substantially as set forth.

- 241,682.—**Writing Ink and Fluid.** James E. Mallory, New York, N. Y. Filed Nov. 18, 1880.

Claim.—1. The process of manufacturing inks or writing-fluids composed of the extract of galls or gallic and tannic acid and salts of iron and gum, by subjecting them to the action of pure oxygen gas, as and for the purposes mentioned.

2. An ink or writing-fluid composed of the extract of nutgalls or gallic and tannic acids and salts of iron and gum subjected to the action of pure oxygen gas, as herein set forth.

241,686.—Composition for Filling the Pores of Wood.

Henry W. Mattick, Lawrenceburg, Ind. Filed Aug. 14, 1880.

Claim.—A composition for filling the pores of wood, consisting of gum-shellac cut in alcohol, kauri gum, spirits of turpentine, drying-oil, raw linseed-oil, and red lead, in about the proportions described.

241,694.—Paint for Ships' Bottoms. Millard F. Morrison, Alexandria, Va., assignor of three-fourths to M. J. Wine, Washington, D. C. Filed Oct. 29, 1880.

Claim.—1. A marine paint consisting of tar-oil, pine-oil and brown metallic, substantially as described.

2. A marine paint composed of tar-oil, pine-oil, brown metallic, lamp-black and copperas, mixed in or about the proportions substantially as described.

241,738.—Manufacture of Artificial Chinoline. Zdenko H. Skraup, Vienna, Austria. Filed June 5, 1880.

Brief.—The improvement consists in the formation of chinoline by the synthetic method.

Claim.—1. As a new article of manufacture, an artificial chinoline having the characteristics herein specified.

2. The within described process for the production of artificial chinoline by the action of glycerine and sulphuric acid upon a mixture of nitro-benzole and aniline, substantially in the manner above described.

241,772.—Process for the Treatment of Flaxseed, &c. Homer T. Yaryan, Toledo, Ohio. Filed April 15, 1881.

Claim.—The process which consists in adding water or steam to flaxseed before crushing or grinding, in combination with any process for extracting oil by percolation with a hydrocarbon solvent, for the purpose of facilitating the process of extracting the oil.

241,803.—Compound for Painting Roofs, &c. Aldus F. Hawthorn and Geo. W. Hawthorn, Lancaster, Pa. Filed Dec. 24, 1880.

Claim.—The herein-described composition of matter, to be used for painting roofs, fences, and all metallic surfaces, consisting of coal-tar, asphaltum varnish, gutta-percha, japan varnish, spirits of turpentine, venetian red, pulverized pumice-stone, ground alum, dry sulphate of iron, air-slaked lime, and burnt umber, in the proportions specified.

241,810.—Composition of Matter for the Manufacture of Illuminating Candles. Richard F. W. Loper, Philadelphia, Pa., assignor of one-half to Charles McKeene, same place. Filed Feb. 14, 1881.

Claim.—1. The combination of animal charcoal and carbon oil with wax as a composition of matter for making illuminating candles.

2. The herein-described composition of matter to be used for the manufacture of candles, consisting of carbon oil, animal charcoal and wax, in the proportions specified, or any modification of them.

241,868.—Treating Phosphates for Fertilizers. Gustav A. Liebig, Baltimore, Md., assignor of one-half to John F. Gibbons, same place. Filed Jan. 8, 1881.

Claim.—1. The above-described method of treating phosphates or phosphorites, by mixing them with carbon and subjecting them to heat, for fertilizing purposes.

2. The product obtained by the above-described treatment of phosphates—viz., a calcined mineral phosphate for plant-food and fertilizing purposes, substantially as described.

241,876.—Blacking Compound. George E. Mollar, Austin, Nev. Filed September 28, 1880.

Claim.—A blacking compound consisting of sulphate of zinc, alcohol, shellac, camphor and lampblack, in about the proportions and prepared in the manner herein described.

241,897.—**Manufacture of Size.** Emil R. Von Portheim, Prague, Austria. Filed Oct. 26, 1880.

Brief.—Treats egg-albumen, flesh, blood, gluten, &c.

Claim.—The process herein described of treating insoluble or coagulated proteinous substances by first drying them, then mixing them with an alkaline solution and grinding the mixture, then heating, and finally neutralizing the mixture by adding muriatic acid, substantially as specified.

241,941.—**Paint Composition.** Henry Berg, Jersey City, N. J. Filed January 31, 1881.

Claim.—A paint composition consisting of white lead, ground metallic iron, Venetian red, varnish, brown japan, turpentine and a liquid dryer, prepared in the manner and proportions substantially as and for the purposes set forth.

241,932.—**Lubricating Paste and Pencil.** Thos. Colgan, Brooklyn, N. Y. Filed March 25, 1881.

Claim.—1. A lubricating compound composed of petroleum, paraffine, and plumbago, admixed in substantially the proportions set forth.

2. As a new article of manufacture, petroleum solidified by evaporation and the admixture therewith of paraffine and plumbago, and molded into rods or pencils, substantially in the manner and for the purposes herein set forth.

241,941.—**Method of Preparing Nitro-Glycerine Compounds.** Gilbert S. Dean, San Francisco, Cal. Filed July 29, 1879.

Brief.—The preferred proportions employed are one hundred parts of nitro-glycerine, ten parts of pulverulent nitro-cellulose or nitro-dextrine, and from two to three parts of water, the whole stirred together until an intimate mixture of the several ingredients is accomplished, forming a pasty mass, which is ready to be inserted into blasting-cartridges, and which can be handled with greater safety than simple nitro-glycerine.

Claim.—The method, substantially as described, for increasing the safety in handling or transportation of nitro-glycerine, consisting essentially in intimately mixing it with a pulverulent nitro-compound and water, as specified.

242,015.—**Process of and Apparatus for Distilling Turpentine.** James A. McCreary, Baltimore, Md. Filed April 14, 1880.

Brief.—The crude turpentine is mixed with a suitable menstruum, and when thoroughly incorporated milk of lime, or its equivalent, is added, the excess of the same precipitated, and the turpentine so prepared is then distilled in a closed vessel, in which the uncondensable products of distillation with air are forced down into the liquid remaining therein.

Claim.—1. In a process of distilling turpentine, the method hereinbefore set forth of forcing the air and uncondensed products of distillation from the worm to the still and conducting them under the surface of the liquid contents of the latter, substantially as described.

2. The process herein described of preparing crude turpentine for distillation, consisting in adding thereto a suitable menstruum and an alkali, precipitating excess of the latter, and filtering, as set forth.

3. The process hereinbefore described of preparing refined products from crude turpentine, consisting in diluting the crude materials with a suitable menstruum and filtering it, then distilling, and, pending the progress of distillation, conducting the uncondensed product from the worm to the still and forcing them through the liquid contents of the latter, as set forth.

4. The combination, substantially as hereinbefore set forth, of the still having laterally-perforated air-pipes, the worm or condenser, and an air-forcing device intermediate the worm and still and in connection with both, substantially as described.

5. The combination, substantially as set forth, of the still having air-pipes leading to, or nearly to, its bottom, the worm-tube provided with a U-pipe, and the air-forcing pump intermediate the worm and still and in connection with both, as described.

242,304.—**Machine for Cutting Tapered Corks.** Geo. W. Greene, Pittsburgh, Pa. Filed March 12, 1881.

Brief.—The cutting-knife slides on a conical mandrel. Knives may be placed at each end of the shaft, so as to cut a cork with each movement of the shifting-level.

- 242,272.—**Treatment of the Saline Liquors Resulting from Soap-Manufacture in Order to Extract the Matters Contained Therein.** Constant V. Clolus, Paris, France. Filed March 9, 1881.

Brief.—The object is to treat liquors resulting from soap manufactures, so as to obtain alkaline salts, fatty acids, and glycerine.

Claim.—1. The treatment of saline liquors resulting from the manufacture of soap by hydrochloric acid or carbonic acid, or by these two acids simultaneously, for the purpose of separating the salts and the fatty bodies therein contained, substantially as herein described.

2. The ulterior treatment of the liquid by evaporation, substantially as herein described.

3. The treatment of the liquor by blowing air through it, substantially as and for the purpose herein set forth.

4. The precipitation of the chloride of sodium in the glycerine by hydrochloric acid in excess, substantially as herein described.

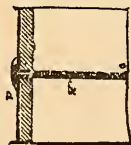
- 242,298.—**Compound for Removing Paint.** Herman Gasser, Platteville, Wis. Filed Dec. 24, 1880.

Claim.—A compound for removing paint, consisting of a solution of pure caustic soda and starch, the former brought to the boiling-point before the starch is added, as described.

- 242,326.—**Paint Can.** Herbert H. Hull, Cleveland, Ohio. Filed Oct. 26, 1880.



Claim.—1. A can having a cylindrical body with internal ribs, *a' b'*, made by folding together the meeting edges of the parts forming said body, and provided with a diaphragm, *C*, of similar shape, with grooves *a b* in its periphery fitting upon said ribs *a' b'*, whereby the diaphragm is adapted to be moved up and down within the can without its turning, by means of a screw-shaft passing centrally through it, substantially as described and shown.



2. A can wherein the lower end of its screw-shaft *B* is passed through both the false and true bottom of the can, and by means of plate *d* and cap *d* held from vertical displacement, substantially as described and shown.

- 242,331.—**Toilet Bottle.** J. Albert Kimball, New York, N. Y. Filed April 18, 1881.

Claim.—1. The combination of the slotted bail *E*, the cap *D*, or its described equivalent, swiveled to the said bail, and the bottle-top or stopple *B*, having buttons *C* for retaining the bail, substantially as and for the purpose set forth.

2. The combination of the slotted bail *E*, the cap *D*, swiveled to and having a thumb-piece, *d*, above the said bail, and the stopple *B*, having buttons *C* for retaining the bail, and catches *c c'* for locking the bail in either of two horizontal positions, substantially as hereinbefore set forth.

- 242,398.—**Lye Trough for Soap-Makers.** Daniel F. Trout, Fesburg, Ohio, Filed April 13, 1881.

Claim.—The metal lye trough or pan herein shown and described, having the flaring rim *b* and the spout *a*, which latter is on a level with the bottom of the trough or pan, substantially as and for the purposes specified.

- 242,417.—**Case for Holding Medicine Bottles.** Thos. A. Long, Philadelphia, Pa., assignor to James W. White, James Clarence White, and H. M. Lewis, trustees, all of same place. Filed April 8, 1881.

Claim.—1. The combination, substantially as hereinbefore set forth, of the case composed of two wings or portions hinged so as to form an inclosing-case, with rows of independently-pivoted article-holders carried by each of said wings, said holders, when the case is closed, lying parallel with the top and bottom of the case, while each holder, when the case is thrown open, is exposed to view, so that any one of said holders may be rocked upon its pivot independently of the others to permit its particular article to be removed or replaced.

2. The improved case hereinbefore described, consisting of the folding wings having a series of independently-pivoted marked article-holders in each wing, a series of partitioned spaces, an exhibition or list card fitting said casing, so as to be inclosed thereby when the case is closed, and the fastenings for said card within the case.

- 242,439.—**Saccharification of Amylaceous Matters by Malt, &c.** Auguste P. Dubrunfaut, Paris, France. Filed April 23, 1881. Patented in France, March 2, 1881.

Claim.—1. The method of producing maltose by treating starch with malt at substantially the temperature described.

2. The production of massive maltose and crystal syrups by treating starch in the presence of water with malt or its infusions, at the temperature and in the proportions substantially as described.

3. The method of increasing the activity of malt by oxidizing the infusion thereof, substantially as described.

4. The method of preparing pure maltose by saccharifying starch with malt, crystallizing, expressing the mother-liquid, remelting and recrystallizing, in substantially the manner described.

5. The massive maltose and crystal syrups described, prepared from starch by the action of malt, in the manner set forth, and distinguishable by their purity and flavor.

6. Crystallized maltose purified and dried substantially as described.

- 242,507.—**Application of Varnishes.** Edwin R. Cahoone, George Walker, and Charles E. Cahoone, Newark, N. J.; said Charles E. Cahoone and George Walker, assignors to said Edwin E. Cahoone. Filed Nov. 19, 1880.

Claim.—1. Japan or other body varnish prepared in solid form in sheets of such thickness as may be desired, adapted to be applied to the surfaces to be covered, whereby the entire thickness or body of varnish may be applied at a single operation.

2. The mode or method of applying japan or other body varnish, which consists, essentially, in applying a solidified sheet of varnish having the required thickness of body to the surface to be protected, and causing the same to adhere by means of heat.

3. Metallic articles the surfaces whereof are to the desired extent covered with sheets of japan varnish made adherent by means of heat.

- 242,531.—**Saccharated Extracts.** Charles S. Hallberg, Chicago, Ill., assignor to Wheeler Chemical Works. Filed April 23, 1880.

Brief.—An ordinary fluid extract is first made by repercolation with any appropriate solvent. This solution is evaporated to or near complete dryness at a low temperature and the percentage yield noted. To this dry or nearly dry extract, after being powdered, there is added such an amount of milk-sugar or equivalent diluent as will exactly replace and represent the inert and insoluble matter left in the percolator.

- 242,554.—**Press for Treating Paraffine Oils.** Herman Neahous, Pittsburg, Pa. Filed April 15, 1881.

Brief.—Improvement on the invention in Letters Patent No. 231,840, dated August 31, 1880, to same inventor.

Claim.—1. A press for treating paraffine oils, composed, essentially, of a casing or oil receptacle A, of suitable shape, having a chambered filtering head B, and stuffing box B', a chambered filtering plunger C, fitting tightly in the receptacle A, and provided

with a tubular piston rod M, an inlet N', and outlet N, all constructed and combined substantially as and for the purpose herein shown and set forth.

2. A press for treating paraffine oils, composed, essentially, of an outer jacket or casing O, an inner oil receptacle A, provided with a chambered filtering head B, stuffing box B', inlet N', outlet N, and U-shaped pipe P, and a chambered filtering plunger C, fitting tightly in the oil receptacle, and having a tubular piston rod M, working in the stuffing box B', and pipe P, substantially as and for the purpose herein shown and described.

3. In a press for treating paraffine oils, an oil receptacle or press box having suitable discharge pipes, in combination with a stationary wax filter attached to and forming part of one of the heads of the press, and a movable wax filter attached to and forming part of the press plunger, substantially as set forth.

4. The chambered plunger C, constructed with the packing flange h, interior flanges g g', at right angles to one another, perforated disk G, grating H, strainer cloth I, with its annular packing, adjustable packing ring L, having flange l, bolts i, packing K, and tubular piston rod M, all constructed and combined, substantially as and for the purpose herein shown and specified.

242,575.—**Oil-Press Mat.**—William Ahrenbeck, Hempstead, Texas. Filed July 26, 1879.

Claim.—1. The combination, with the metal leaves of a three-leaved oil-press mat, of a hinge flexible connecting the said leaves together and provided with a pintle common to all of the leaves, said hinge consisting of two sets of metal hinge-plates of three in a set, each plate formed with an elongated slot at the outer end, two of the said hinge-plates of each set being pivoted at their inner ends to the leaves, and the remaining hinge plates of said sets being connected with loops secured to the center loop and a rod or pintle passing loosely through the slots of the hinge plates, whereby the parallelism of the leaves will be maintained under pressure and the leaves moved simultaneously together and the pintles relieved from strain, substantially as described.

2. The combination, with the metal leaves of a three-leaved oil press mat provided with marginal ribs, of a hinge flexible connecting said leaves together and composed of two sets of metal hinge plates slotted at one end and pivoted at their remaining ends to the several leaves of the mat, a single rod or pintle, common to all of the leaves passing loosely through the slots of the hinge plates, and a handle arranged upon the pintle between said two sets of slotted hinge plates, substantially as described.

3. The metal plates or leaves of an oil press mat provided with a marginal strengthening rib formed with lateral perforations or oil-passages, substantially as described.

242,599.—**Phosphated Medicinal Remedy.** Charles A. Catlin, Providence, R. I., assignor to Rumford Chemical Works, same place. Filed July 12, 1880.

Claim.—A phosphated medicinal remedy composed of acid phosphate and sulphurous acid in aqueous solution substantially as described.

242,707.—**Azo Color.** James H. Stebbins, New York, N. Y. Filed February 9, 1881.

Claim.—As a new article of manufacture, the dyestuff or coloring matter produced by the reaction of monosulpho-acid of beta-naphthol on a mixture of diazo-benzole and diazo-naphthaline hydrochlorates, combined substantially as herein set forth, or by any other means which will produce a like result and having the qualities hereinbefore enumerated.

242,783.—**Explosive Compound.** John M. Lewin, Paris, France. Filed March 1, 1881.

Claim.—1. An explosive composition, as described, being a pasty mass comprising nitro-glycerine and cellulose and niter incorporated with the nitro-glycerine, substantially as set forth.

2. A plastic gelatinized nitro-glycerine compound, comprising, in combination with nitro-glycerine, and in explosive gelatinizing material and an oxidating salt, substantially as described.

242,792.—**Medical Compound.** George W. Robbins, Economy, Ind. Filed December 30, 1880.

Claim.—The herein-described composition of matter, to wit: two and one-half drams of bromide sodium, two and one-half drams of sulpho-carbolate sodium, two drams of hydrate chloral, one ounce mixture (equal parts) whisky and water, ten drops pure liquid carbolic acid, fifteen ounces syrup tolu, and three drams essence partridge-berry, in the proportion substantially as stated.

242,828.—Lubricating Compound. Robert Irvine, Royston Granton, County of Mid-Lothian, North Britain. Filed December 6, 1880. Patented in Great Britain July 29, 1880.

Claim.—The method of making lubricating compounds by dissolving and uniting under the action of heat saponaceous matter and mineral oil, said saponaceous matter comprising a fatty acid and an alkali, and being free from water when added to the mineral oil, substantially as described.

242,855.—Dyeing Fabrics with Aniline Colors. Nicholas C. Armand and Jacques E. Berton, Paris, France. Filed January 31, 1881. Patented in France September 29, 1880.

Claim.—1. The herein-described method of rendering aniline colors soluble in benzine and essences, by combining said colors with a solvent or intermediary agent, such as the composition of oil or fat, acid, ether, and alkalies as set forth.

2. A composition paste of aniline color and a solvent, such as the compound of oil or fat, acid, ether, and alkali set forth, adapted to render the said color soluble in benzine and essences, substantially as described.

3. The compound of aniline color, oil or fat, acetic or hydrochloric acid, sulphuric ether, volatile alkali, and potash, as set forth.

242,871.—Paint and Putty Burner. George Bradish, Bay Side, N. Y. Filed Aug. 16, 1880.

Claim.—1. A paint and putty burner constructed substantially as herein shown and described, consisting of the stand A, inlet tube B, having nipple D and adjustable nipple E, for regulating the supply and pressure of gas, the mixing tube C, having air inlet openings F, and an adjustable sleeve, G, for regulating the supply of air, and the flattened burner H, for producing a sheet-flame as set forth.

2. In a paint and putty burner, the combination, with the nipple D of the gas inlet pipe B, having a slit in its top, of an adjustable nipple, E, also having a slit in its top, substantially as herein shown and described, whereby the supply and pressure of gas can be regulated at or near the point of escape of gas, as set forth.

3. In a Bunsen burner, the slitted nipple E, arranged adjustably over the slitted nipple D, to regulate the flow of gas into the mixing tube, as described.

242,883.—Handle for Pill-Cutters. Geo. F. Chappell, New York, N. Y. Filed March 16, 1881.

Claim.—As an improved article of manufacture, the handle for pill-cutters herein described, consisting of the corrugated face plate *a* and the metallic flanged back plate *b*, having the series of ribs *c c*, the projecting end handles, *d d*, and the projecting gage-plates *e e*, attached to the ends of the back plate, the back plate and face plate being connected by screws or pins passing into the ribs *c*, all substantially as set forth.

242,893.—Process of making Nitro-Dextrine. Gilbert S. Dean, San Francisco, Cal. Filed February 26, 1881.

Claim.—The process herein described for producing nitro-dextrine, consisting, essentially, in treating rags with warm dilute sulphuric acid to start dextrination, washing the rag, then submitting same to a mixture of sulphuric and nitric acids to produce the required nitration and dextrination, precipitating the product by water and then thoroughly washing it, as specified.

243,121.—Elastic Bulb Syringe for Washing out the Stomach. Jas. A. Grant, Ottawa, Ontario, Canada. Filed April 7, 1881.

Claim.—1. An elastic-bulb syringe provided with a disconnecting sleevejoint connecting the discharge tube with the bulb, consisting of tubular stem D, secured to the bulb, and ferrule H, inserted into the tube, and both slipping together, as and for the purpose set forth.

2. As an improvement in elastic-bulb syringes, the combination, with the tube B, of the gag I and ferrule H, as and for the purpose set forth.

243,178.—Process of Manufacturing an Inspissating and Sizing Paste from Animal Proteine. Emil Von Portheim, Smichew, Austria. Filed May 13, 1881.

Claim.—1. The process herein described of manufacturing an inspissating and sizing paste for use in the arts by treating extracts of animal proteinous substances with caustic alkalies, substantially as set forth.

2. As a new article of manufacture, an inspissating and sizing paste obtained from animal proteinous substances, substantially as described.

243,272.—Manufacture of Candles. Firmin M. Joly, Paris, France. Filed Jan. 27, 1881. Patented in France Nov. 24, 1880.

Claim.—1. A candle provided with a wick composed of a core or cores of fibers arranged parallel with one another, and an enveloping sheath of wick strands plaited around said core or cores, substantially as and for the purpose specified.

2. A candle provided with a wick composed of two or more cores of fibers arranged parallel with each other, each of said cores being isolated from the others by an enveloping sheath of wick strands plaited around and between the cores, substantially as described, for the purposes specified.

3. A candle provided with a wick having two or more cores of varying thickness, substantially as and for the purpose specified.

4. A candle provided with a wick composed of two or more cores of fibers arranged parallel with each other, said cores varying in thickness, substantially as and for the purpose specified.

5. A candle provided with a wick composed of two or more cores of fibers arranged parallel with one another, said cores varying in thickness and being isolated from each other by a sheath of wick strands plaited around and between the cores, substantially as and for the purpose specified.

6. The method of forming wicks for candles by first forming a bundle or bundles of fibers, arranged parallel with each other, and then plaiting, weaving or twisting strands of fiber around said bundle or around and between said bundles, substantially as and for the purpose specified.

7. A candle-wick composed of a core or cores of fibers, arranged parallel with each other and inclosed in a sheath of plaited, twisted or woven wick strands, substantially as and for the purpose set forth.

8. A candle-wick composed of two or more cores, the fibers of which are arranged parallel with each other, said cores being of varying thickness and isolated from each other by a surrounding sheath of wick strands woven, plaited or twisted around and between them, substantially as and for the purpose specified.

9. A candle composed of two materials that have different melting points, in combination with a wick composed of a core or cores, the fibers of which are arranged parallel with each other and enveloped in plaited, twisted or woven wick tubes, substantially as and for the purpose specified.

243,297.—Alcohol-Still. Oliver L. Perin, Cincinnati, Ohio. Filed April 23, 1881.

Claim.—The vaporizing chamber consisting, essentially, of the frame A, partitions B B B, of which three or any odd number may be used, bay C, provided with an overflow-weir, c, down-pipe D, and perforated bottom plate E, arranged and operating substantially as described.

243,310.—Process of Separating Gypsum from the Solution of Starch-Sugar Produced by Treating the latter with Sulphuric Acid. Carl Scheibler, Berlin, Germany, assignor to Hugo Kunheim, same place. Filed Jan. 17, 1881.

Claim.—1. The process of removing gypsum from neutral solutions, which consists in treating the solution with an excess of barium oxalate, or other insoluble barium salt obtained from a soluble oxalate, and which forms an insoluble combination with lime, substantially as set forth.

2. The process of removing gypsum from saccharine solutions, which consists in removing the bulk of gypsum by filtration or decantation, and then treating the solution with an excess of barium oxalate or other insoluble barium salt obtained from a soluble oxalate, and which forms an insoluble combination with lime, and removing the remaining gypsum with the scum during concentration of the solution, substantially as described.

3. The process of removing sulphuric acid from saccharine solutions, which consists in first neutralizing the acid by means of lime, then removing the bulk of the resulting gypsum by filtration or decantation, and the remaining gypsum by treating the solution with an excess of barium oxalate or other insoluble barium salt obtained from a soluble oxalate, and which forms an insoluble combination with lime, substantially as set forth.

243,432.—Explosive Compound. Silas R. Divine, Loch Sheldrake, assignor to Rend Rock Powder Company, New York, N. Y. Filed Dec. 7, 1880.

Claim.—The explosive compound consists of a solid ingredient, such as chlorate of potash, and a liquid ingredient, such as nitro-benzole, mechanically united substantially in the proportions of from three to four and one-sixth parts of the solid ingredient to one part of the liquid ingredient.

243,377.—Process of Manufacturing Fatty Acids for Making Candles.

Armand Muller Jacobs, Moscow, Russia, assignor to Abraham Garrison Burnett, Bronxville, N. Y. Filed May 10, 1881.

Claim.—The process herein described of manufacturing sebacic or fatty acids from glycerides, consisting, first, in forming sulpho-sebacic acids by treating the oils with sulphuric acid and boiling this mixture with double its quantity of water, and secondly, in decomposing this sulpho-sebacic acid into sebacic acid and oxyoleic acid by boiling it with water.

243,378.—Turkey-Red Mordant. Armand Muller Jacobs, Moscow, Russia, assignor to Abraham Garrison Burnett, Bronxville, N. Y. Filed April 27, 1881. Patented in Germany Sept. 30, 1877.

Claim.—A process of preparing a mordant for use with alizarine in dyeing in turkey-red color, which consists, first, in uniting about two hundred and twenty parts of oil or fat and fifty parts of sulphuric acid, the mixture being stirred for about three hours, until a temperature of 30° to 40° Reaumur is reached, and then left at rest for about twelve hours; secondly, adding to this mixture a watery solution of crystallized soda, and allowing the whole to stand about twenty-four hours; thirdly, drawing off the neutralized oil and adding about twenty-six parts of aqua-ammonia.

243,441.—Indelible Ink.—Henry Froehling, Baltimore, Md., assignor of one-half to Charles C. Edgerton, same place. Filed May 13, 1881.

Brief.—The ink is intended for use in writing or canceling. The oleaginous or volatile constituents are removed from the asphaltum by calcination. Water is added to the paste when intended for use as a writing ink.

Claim.—A base for writing or canceling inks, consisting of lamp-black, a caustic alkali, and asphaltum.

243,485.—Apparatus for the Manufacture of Glue. Henry H. Baeder, Cincinnati, Ohio, and Wm. A. Baeder, Brooklyn, N. Y. Filed May 28, 1881.

Claim 1.—The apparatus or plant for the manufacture of glue, consisting of vat A, wheeled cage B, shaft *h*, provided with hoisting drum and ropes, platform *f*, and track and the wash-mill or boiling-tank C, provided with water-supply and steam pipes.

2. In apparatus for manufacture of glue, the cage B, fitted with a hinged bottom and wheels, the soaking-vat A, hoisting shaft and ropes, and the elevated tracks *g*.

3. The perforated cage B, in combination with the soaking-vat A.

4. The combined wash-mill and boiling-tank C, provided with a perforated false bottom, a perforated steam-pipe, steam-heating coil, and discharge pipes.

5. The combination, with the washing-tank C for glue stock, of the water-supply pipe *o*, perforated steam-pipe *p* and coiled steam-pipe *q*.

6. The rotating stirrer *r*, in combination with the wash-mill or boiling-tank A for glue stock.

243,510.—Process of Obtaining Perfume of Natural Flowers and Apparatus Therefor.—Robert A. Chesebrough, New York, N. Y. Filed April 26, 1881.

Claim.—1. The improved process of enfleurage, consisting in placing flower stems^s with the flowers upon them in water or moist earth or material in the same chamber with the absorbing agent, or in a chamber communicating with the chamber containing said agent, but with the flowers out of contact with said agent.

2. An apparatus for enfleurage, consisting of a chamber or communicating chambers containing trays or draws for the absorbing agent and receptacles in which flower-stems may be placed with their flowers out of contact with said agent.

243,547.—Bottle. William T. Goldsmith, Atlanta, Ga. Filed April 8, 1881.

Claim.—In a drop-vial, the cork-socket L, arranged on the side opposite to that on which the weight or projection J is placed and under the bead D.

243,596.—Oil-Press Mat. Jean Jaques Mistrot, Bryan, Texas. Filed March 23, 1880.

Claim—1. In an oil-press mat, a leaf composed of two thicknesses of metal, having placed in between them a layer of press-cloth or cork.

2. An oil-press mat in which the outer leaves have applied at their outer sides a thickness of press-cloth or cork and a thickness of leather, which leather forms the hinge for connecting the two outer leaves together.

3. In an oil-press mat, the combination of the three leaves A B C, the leather covering J for the two outer leaves, and which forms the hinge L, with the central hinge R, connected to the plate C at one end and to the hinge L at the other.

4. In an oil-press mat, the combination of the three leaves A B C, hinges L R, and connecting-rods for uniting the hinge R to the hinge L, and plate C.

243,635.—Manufacture of Aluminous Cake. Conrad Semper, Philadelphia, Pa., assignor to Harrison Bros. & Co., same place. Filed Dec. 7, 1880.

Claim.—The herein-described process of manufacturing a white aluminous cake from ferruginous aluminous sulphate, by treating the aluminous sulphate in a semifused condition with zinc or zinc-dust.

243,669.—Method or Process of Manufacturing Glucose from Grain. Horace Williams and John L. Alberger, Buffalo, N. Y. Filed October 28, 1880.

Claim.—1. The process, as a whole, substantially herein described, of manufacturing and crystallizing grape-sugar from corn or cereals, consisting of first converting the starch and dextrine into syrup in a solution of acid and water under steam heat, then neutralizing the acid, then separating the neutralizing residuum, then filtering with bone-black, then reducing in a vacuum pan, then cooling the reduced or concentrated syrup, then adding a small percentage of powdered grape-sugar, then washing the crystallized sugar in cold water, and finally throwing or pressing out the mother liquor.

2. The process substantially as herein described, of washing off and eliminating the impurities of crystallized grape-sugar by pressure or centrifugal force.

243,685.—Gelatine Prepared in the Form of Dried Foam. Reuben Brooks, Rockport, Mass. Filed March 28, 1881.

Claim.—1. As a new article of manufacture, gelatine prepared in the form of dried foam.

2. The process of preparing gelatine in the form of dried foam, consisting in two essential steps: first, in mingling air with a gelatinous solution to render it foamy; and, second, in subjecting the said foam to currents of dry air to dehydrate it.

3. The process of preparing gelatine in the form of dried foam, consisting in two essential steps: first, in mingling air with a gelatinous solution to render it foamy; and, second, in subjecting the said foam to the action of dry air to dehydrate it.

243,713.—Manufacture of Isinglass, &c. William N. Le Page, Rockport, Mass. Filed Dec. 29, 1880.

Claim.—1. The process of obtaining gelatine from salted fish skins, consisting, essentially, in first desalting the fish skins and afterward subjecting them to the decomposing action of steam.

2. An apparatus for extracting gelatine from fish tissues, consisting of an outer steam jacket or cylinder, and inner perforated vessel for holding the fish skins, a door or cover at both top and bottom of the perforated vessel or cylinder, and suitable steam induction and eduction pipes.

243,757.—Manufacture of Soap. Paul Casamajor, Brooklyn, N. Y. Filed April 22, 1881.

Claim.—The within-described improvement in the manufacture of soap, the same consisting in reducing any ordinary soap to a soft or pasty mass by heat, as set forth, then adding spirits of turpentine or heavy oil of petroleum, while rapidly agitating, until the whole is combined in a uniform mass, and then hardening and dividing.

243,827.—Manufacture of Lactates. Chas. E. Avery, Boston, Mass., assignor to the Avery Lactate Company, Portsmouth, N. H. Filed Dec. 21, 1880.

Claim.—The method of manufacturing lactic acid and lactates by the fermentation of a sugar of vegetable origin with a lactic ferment in the presence of nitrogenous matters, chiefly of vegetable origin, and of a substance suitable to gradually neutralize the acid as fast as formed, as set forth, whereby time is economized, putrefaction prevented and purification rendered simple and inexpensive.

243,848.—Pill-Machine. Pierre Cauhape, New York, N. Y. Filed Oct. 21, 1878.

Claim.—1. The combination of the platform A, containing cavities *a*, the fixed plate B, provided with semicircular notches on its edges corresponding with the cavities *a* in

the platform A, the adjustable plates C C, provided on their inner edges with notches coinciding with the notches in the plate B, so that when said adjustable plates are moved laterally over the face of the platform near to or against plate B, the coinciding notches on the fixed and movable plates, respectively, will operate to so adjust and firmly hold the pill, whether spherical or spheroidal, that the penetration of the needles therein will be in a radial or an axial direction, the needle bar E and needles N.

243,884.—Vessel for Holding and Dispensing Mustard. Jacob Gulden, New York, N. Y. Filed Feb. 4, 1881.

Claim.—The mustard-box A, having opening *b* in its lower part, combined with the gate F, for closing said opening, and with the plunger D, having circumferential wiper *a*, and with cover B, all arranged for operation.

243,910.—Process of Manufacturing Distilled Spirits from Grain. Thomas A. Jebb and William T. Jebb, Buffalo, N. Y. Filed April 20, 1881.

Claim.—1. As an improvement in the art of manufacturing distilled spirits from grain, the method which consists in separating the bran and gluten from the starch contained in the reduced grain, and then mashing, fermenting and distilling the separated starch alone, whereby purer spirits are produced and the bran and gluten are preserved in a more useful condition.

2. The herein described process of manufacturing distilled spirits from grain, which consists in first steeping the grain, then reducing the steeped grain by grinding or beating, then separating the bran and gluten from the starchy liquid by sifting, then mashing, fermenting and distilling the separated starch alone.

243,800.—Composition for Suppositories. Leonard Roth, Brooklyn, N. Y. Filed Oct. 18, 1880.

Claim.—A composition for vaginal suppositories, consisting of tannic acid, alum, pulverized barberry leaves, opium and glycerine.

243,876.—Oil for Dressing Leather. Henry Fink and Catharine Fink, Baltimore, Md. Filed Apr. 21, 1881.

Claim.—The herein-described composition of matter consisting of lime, soapstone, chalk, water and oil combined.

243,936.—Soap. Robert A. McCullough, Milwaukee, Wis. Filed April 27, 1881.

Claim.—1. In a soap compound, the mixture of oleaginous and alkaline material with the powdered bark of the *Ulmus fulva*.

2. In a soap compound, the mixture of a cold solution of sulphuret of potassium with Venetian red and with a warm solution of sulphate of iron, to color and finish said compound.

3. A soap consisting of olive oil, stearine, peanut oil, lard, caustic soda, crystals of soda, common salt and slippery elm bark.

4. The improved soap formed by the mixture of olive oil, stearine, peanut oil, lard, caustic soda, crystals of soda, common salt, slippery elm bark, sulphuret of potassium, Venetian red, sulphate of iron and water.

5. In the manufacture of soap, the process described, consisting in, first, forming a mixture of olive oil, stearine, peanut oil and lard, saponifying this by the addition of caustic soda, either in a solid or liquid state, and boiling the whole to form a curd soap; secondly, preparing a mixture of crystals of soda and common salt, boiling the same to a granulated state, and adding water thereto, and then adding the two mixtures together; and, thirdly, stirring into the resulting mass powdered slippery elm bark.

6. The process of manufacturing soap, consisting in, first, preparing a curd soap by mixing together olive oil, stearine, peanut oil and lard, saponifying this mixture by the addition of solid or liquid caustic soda, the whole being boiled together; secondly, preparing a solution by mixing together crystals of soda and common salt, boiling the same to a dry granulated state, and adding water thereto; thirdly, adding the two mixtures together in a heated state and drawing the fire from under this mixture; fourthly, stirring into the resulting mass powdered slippery elm bark; fifthly, making a cold solution of sulphuret of potassium and adding Venetian red thereto; sixthly, making a separate solution of sulphate of iron in warm water and adding it to the cold solution; and, finally, adding this mixture to the soap solution and incorporating the whole together by thoroughly mixing or crutching the same.

243,991.—Manufacture of Soda. Ernest Solvay, Brussels, Belgium. Filed May 11, 1881.

Claim.—The process of mixing soda with the bicarbonate of soda previously to the introduction of the said bicarbonate of soda into the decomposing apparatus.

- 243,939.—**Grinding and Sieving Caustic Alkali.** Wm. J. Menzies, St. Helens, County of Lancaster, England, assignor of one-half to George T. Lewis, Philadelphia, Pa. Filed Dec. 1, 1880. Patented in England Oct. 21, 1879.

Claim.—1. The within-described process for producing ground or powdered caustic alkali; consisting in grinding the alkali while hot or in a temperature sufficiently high to prevent deliquescence.

2. The within-described process for producing ground or powdered caustic alkali, consisting in grinding the alkali while hot, or in a temperature sufficiently high to prevent deliquescence, and sieving or boiling the same.

- 243,949.—**Manufacture of Sulphate of Alumina.** Benjamin E. R. Newlands, Temple House, East Ham, County of Essex, England. Filed Feb. 10, 1881. Patented in England, Dec. 17, 1880.

Claim.—The method of purifying sulphate of alumina from sulphuric acid and iron by evaporating a solution of the impure salt to the proper degree, or by adding water to said salt in sufficient quantity to obtain the impurities in solution and leave the sulphate of alumina practically pure, and then separating the mother liquor containing the impurities by pressure or centrifugal action.

- 243,990.—**Metallic Paint for Roofs, &c.** Jas. S. Smith, Cincinnati, Ohio, assignor to himself and Richard C. Gatch and Porter Iron Roofing Company, both of same place. Filed April 14, 1881.

Claim.—A compound paint consisting of candle gum, asphaltum, rosin pitch, rosin oil and benzine, all combined.

- 244,121.—**Oil Press Mat.** Maurice Gandy and Charles S. Brittain, Liverpool, County of Lancaster, England. Filed July 22, 1880.

Claim.—An envelope or wrapper used in the extraction of oil by pressure from seeds and other oleaginous matter, possessing the following composition and features, viz: a lining or stuffing of cotton belting, paper, wood, or other material which is perforated, indented, or net-worked, in combination with an outer covering and an inner lining, to prevent longitudinal and lateral squirting of the seed when under pressure; an inner lining of woolen cloth woven in plaids, or formed with indentations or net-work in the weaving of the cloth, in combination with an outer or cotton cloth, to prevent longitudinal as well as lateral squirting of the seed when under pressure; an outer cover of cotton cloth, formed with perforations, indentations, or net-work in the weaving of the cloth, in combination with an inner woolen cloth, to prevent longitudinal as well as lateral squirting of the seed when under pressure.

- 244,181.—**Regulator for Nursing Bottles.** Willard C. Carpenter, North Stratford, N. H. Filed March 14, 1881.

Brief.—A regulator determines the amount of milk that may pass through the tube, and it is provided with an indicator.

Claim.—The combination, with the flexible tube, *b*, of the tube *d*, transversely apertured plug, *e*, having pin, *g*, and packing rings, *f*, *f*.

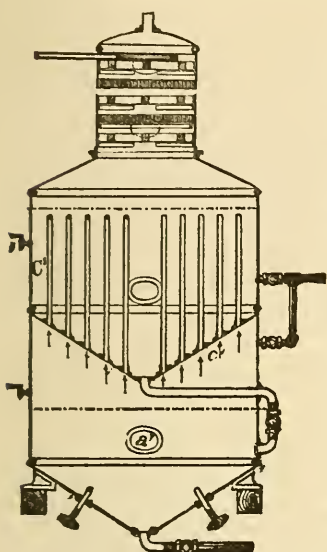
- 244,200.—**Size or Binding Composition.** Christopher G. Dodge, Jr., Philadelphia, Pa. Filed June 14, 1881.

Brief.—The object of this invention is to provide painters, paper-hangers, and others, with a binder or size, which is in the form of a dry and portable powder, which can be at once prepared for use by the addition of a proper quantity of water.

- 244,242.—**Electric Plaster.** Frederick H. Hubbard and John J. Ashley, Brooklyn, N. Y. Filed May 17, 1881.

Claim.—A medicated plaster, having embedded in or laid upon its surface finely-spun copper and zinc wire of such conformation and arrangement as described, that, while the necessary voltaic action is produced, the plaster is left pliable and yielding, as hereinbefore set forth.

- 244,399.—**Still for Ammonia, Spirits, &c.** Charles C. Parsons, New York, N. Y., assignor to Henry Bower, Philadelphia, Pa. Filed September 27, 1880,

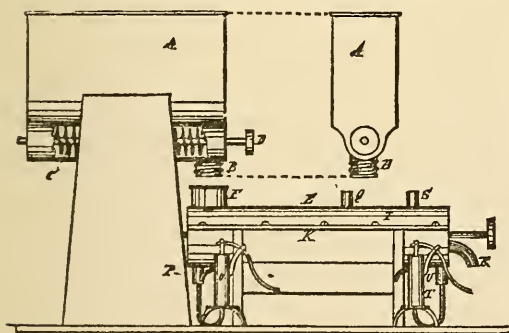


above the other in said column, and supply and discharge pipes communicating with said column at or adjacent to its top.

5. The combination of a body, a column communicating therewith, and a series of distributing shelves, each of which is composed of wooden strips separated by blocks, said shelves being disposed within the column with their strips alternately at right angles.

244,431. —Apparatus for and Process of Treating Paraffine.

Francis X. Byerley, Cleveland, Ohio. Filed June 18, 1881.



Claim.—1. The herein-described apparatus, consisting of refrigerating receiver A, provided with a rotative screw conveyor arranged in relation to the percolator E, having a perforated lining, and a screw conveyor above said lining and a chamber or chambers M M', below, in combination with one or more inlets for the ingress of the frigid mass and solvent, and one or more separate outlets for the oil, solvent, and paraffine.

2. A percolator consisting of a cylindrical case with closed ends, provided with an interior perforated lining, a rotating spiral conveyor, and one or more inlets for the admission of the paraffinized oil and solvent, in combination with the chambers M M', with outlets or spouts P U R, for separately delivering the free oil, solvent, and paraffine.

3. The improved process of treating paraffine by one continuous operation, consisting in reducing the paraffinized oil to a frigid mass in a receiver, and then discharging it into a percolator, and while therein and in motion subjecting the mass in detail to the action of a solvent for the separation of the oil from the paraffine during its passage through the said percolator, assisted in its separation by the action of a pump or vacuum for drawing off the free oil and solvent.

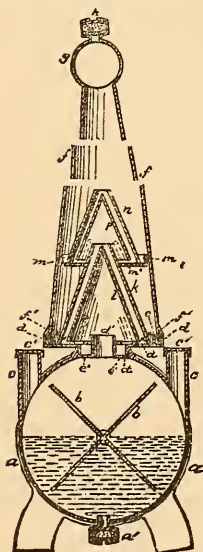
4. The process of separating the oil from paraffinized oil by the action of a solvent in dissolving out the oil from the paraffine in detail and while the same is in motion in its transit through the percolator, assisted by a vacuum or gravity in elimination of said oil at a point or points separate from the discharging paraffine.

5. The process of separating oil from paraffine, which consists in passing the chilled paraffinized oil over a strainer and allowing the principal part of the oil to drain off in its passage, and then while the drained material is still in motion over the strainer subjecting it to the action of a solvent in detail, for the purpose of dissolving out the remaining oil, which, with the solvent, passes through the strainer, the purified paraffine being delivered beyond the strainer to a proper receiver.

244,474.—**Medicinal Tonic Pill.** Joseph Newton, Bennettsville, S. C., assignor of one half to Hope H. Newton, same place. Filed Nov. 12, 1880.

Claim.—The herein-described composition of matter to be used as a medicinal tonic, consisting of sulphureted iron, capsicum, ginger root, wild cherry bark and golden seal, in the proportions stated.

244,476.—**Apparatus for Purifying Alcoholic Liquors.** Byron A. Osgood, Wakefield, Mass., assignor to the Purifying and Maturing Process Company, Hartford, Conn. Filed Nov. 22, 1880.



Claim.—1. The herein-described improved apparatus for purifying liquors, the same consisting of the retort *a*, having evaporating tubes *c*, and pan *d*, constructed as shown, the conductor *f*, containing two or more sets of inner and outer cones, *k l* and *n p*, each outer one provided with a perforated pan *m*, and the tank *g*, having faucets *g'*.

2. The pan *d*, having a central depression, and provided with tube *d'*, perforations *e'*, and annular partition *e*, in combination with the retort and lower set of cones.

3. The combination of the outer cone *k*, having notches *k'*, and supporting the perforated pan *m*, and the inner cone *l*, secured to the outer cone and having its lower edge raised above the pan upon which the outer cone rests, the outer cone being open and the inner cone closed at the top.

4. In combination with the set of cones *k l* and pan *m*, the similar set of cones *p n*, supported by said pan.

244,517.—**Preserving Fruit Juices.** Clarence A. Axline, Fultonham, Ohio, Filed May 26, 1881.

Brief.—Improvement upon patent granted to applicant April 26, 1881.

Claim.—The method consists in boiling such juices before fermentation has taken place, skimming off the scum, filtering through a compound composed of charcoal, crushed mustard seed and ground sassafras root, then boiling a second time and then adding sulphate of lime.

244,551.—**Medical and Nursery Spoon.** Herbert Clayton, Cincinnati, Ohio. Filed June 3, 1881.

Claim.—A medicine and nursery spoon having a porcelain bowl, in combination with a removable metallic cover which is sprung into grooves made in the sides of the bowl. A wire is inserted in the handle, and the outer end of the handle turned down so as to form a support.

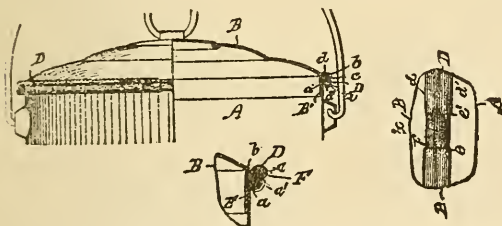
- 244,643.—**Hog-Cholera Compound.** Wm. F. Miller and Charles W. Stover, Tipton, Iowa. Filed Jan. 11, 1881.

Claim.—A liquid composition consisting of turpentine one pint, spirits of camphor one pint, cayenne pepper one-half of an ounce, and carbolic acid one-half of an ounce.

- 244,757.—**Coloring Matter from Tetranitro-Naphthol.** Emil Labhardt, Hottingen, Zurich, Switzerland, assignor to Aktien-gesellschaft Farbwerke, vormals Meister, Lucius & Brünig, Höchst-on-the-Main, Germany. Filed Jan. 8, 1881.

Brief.—The compound upon which substitution is effected to produce the coloring matter is either monobromnaphthaline or monochloronaphthaline, which is converted by full nitrification into tetranitro-naphthol.

- 244,767.—**Paint Can.** William F. C. Quehl, St. Louis, Mo. Filed June 18, 1881.



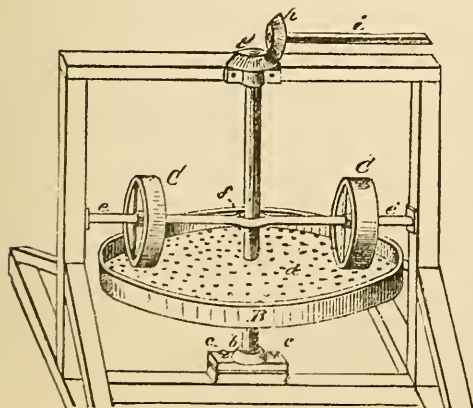
Claim.—1. In a paint can A, having the turn-down edge *a*, the cover B, having projecting rim *b*, the interposed packing *c*, the metal fastening band D, having upper and lower edges *d d'*, the ends of said band joined together by a strip of metal F.

2. The bucket or can A, having its cover B joined to the top edge of the bucket by means of a metal fastening band D, the two loose ends of which are joined together by a separate strip of thin metal F.

- 244,965.—**Medical Compound.** Richard M. Brimmer, Batavia, Ohio. Filed April 12, 1881.

Claim.—A medical compound composed of Cape aloes, rhubarb root, caraway seed, American century herb, juniper berries, agrimony and buchu leaves, and whiskey or other high wine.

- 244,994.—**Machine for Grinding Cement.** Benjamin F. Holland, Utica, Ill. Filed June 4, 1881.



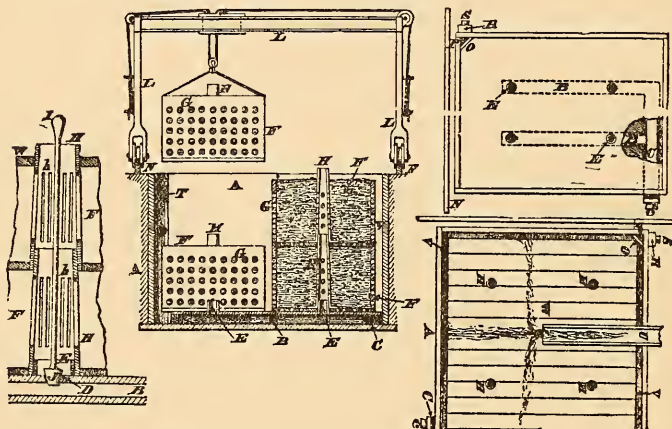
Claim.—In a machine for grinding cement, the combination, with the stationary horizontal shaft *e*, carrying revolving rollers C, of any suitable diameter and width, of the horizontally revolving pan B, provided with the perforated bottom *d*.

- 244,932.—**Method of and Composition for Destroying Insects.** Ferdinand H. Renz, New York, N. Y., assignor of one-half to John C. Spencer, same place. Filed July 30, 1880.

Claim.—1. The hereinbefore described mode or process of destroying insects and vermin, which consists in converting a fluid composed of the ingredients into steam and injecting such steam upon the insect or vermin or into their haunts.

2. As a new composition of matter, a fluid composed of *Pyrethrum roseum* (blooming chamomile), *Veratrum album* (white hellebore), petroleum, carbolic acid and water.

- 245,006.—**Leaching Vat.** George B. Moore, Sr., Cincinnati, Ohio. Filed March 29, 1881.



Claim.—The combination, in a leaching vat, of a readily removable perforated receptacle F, provided with a perforated or porous drain pipe H, adapted to communicate with a discharge trunk B, the inlet of which is closed by a plug J, traversing said pipe H. The combination of a series of readily removable perforated receptacles F, placed one on top of the other, with their drain pipes H, telescoping in the manner described, the pipes in the lower tier of boxes communicating with the outlet of the pit, and the upper pipes passing through the cover W.

- 245,010.—**Medical Compound.** John B. Meyers, Sharonville, Ohio. Filed June 25, 1881.

Brief.—Mixes with one gallon of boiling water twelve ounces of a mixture in equal bulk of burnt alum and common salt, two and a quarter pounds of honey, four ounces of powdered rhubarb, and half a pint of alcohol. The dose of this when cold is from twenty drops to a tablespoonful.

- 245,231.—**Soap.** Adrian C. Shelby, Covington, Ky. Filed May 16, 1881.

Claim.—A soap composed of tallow, olive oil, sal soda, unslacked lime, rosin, borax, alum, white wax, spermaceti and benzine.

- 245,570.—**Varnish.** Ernest Schultz, Berlin, Prussia, Germany. Filed March 15, 1881.

Claim.—The within-described compound for cleaning and preserving polished wood surfaces, consisting of linseed-oil, olive oil, mastic, sulphuric ether, tincture of benzoin, oil of turpentine, tincture of curcuma, and nitro-benzole.

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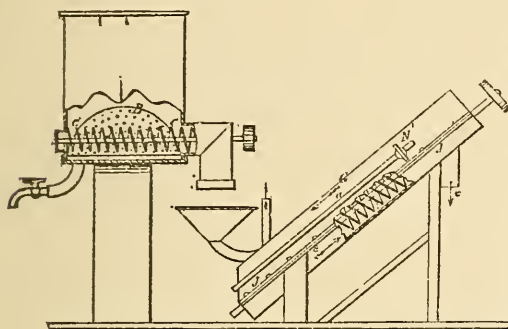
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245,274.—**Mechanism for and Process of Extracting Oil from Oleaginous Materials.** Francis X. Byerley, Cleveland, Ohio. Filed May 11, 1881.



Claim.—1. The process of extracting the remaining solvent from the residuum (meal or other material) herein mentioned by cleansing the said residuum, when in a finely divided state in motion, from the solvent and its odor with free steam within a cylindrical case while the said material is agitated therein and conveyed in one direction and the steam is passed through the comminuted material in an opposite course within said case.

2. In the process of eliminating from the spent oleaginous material from a percolator the remaining solvent therein, rotating and conveying the same through a preferably closed case or cylinder in an oblique position, and disseminating through the agitated material a current of steam in a reverse direction to the course or passage of said material through the case.

3. In an apparatus for separating the solvent and its odor from the residuum or spent meal herein mentioned, a preferably closed case arranged in oblique position, a rotative conveyer longitudinally within said case, provided with an inlet for the admission of the residuum and an outlet for its discharge, and having induction and eduction pipes for the injection of steam into the case and the escape of vaporized solvents.

245,365.—**Apparatus for Extracting Oil from Seed.** John W. Evans, Cleveland, Ohio. Filed March 10, 1881.

Claim.—1. In an apparatus for extracting oil from seed, a stationary tank or container provided with a man-hole at its upper end, a door at the lower portion of its side wall and inclined bottom, of supports located within the tank or container between its top and bottom, and a series of steam-inlet pipes or conduits for distributing steam throughout different portions of the tank or container.

2. In an apparatus for extracting oil from seed, a stationary tank or container provided with a man-hole at its upper end and a door at its lower end, of swinging supports located within the tank or container, between its top and bottom.

3. In an apparatus for extracting oil from seed, a stationary tank or container provided with a man-hole at its upper end and a door at its lower end, of swinging steam-conduits located within the tank.

4. In an apparatus for extracting oil from seed, the combination, with a tank or container, of one or more breakers pivoted at one end.

5. The combination, with a tank or container, of a central pendant spider or support, and one, two or more swinging breakers hinged or pivoted at one end and loosely resting at the other end upon said spider.

6. In combination with a tank or retainer, a combined breaker and support hinged at one end and supported at its other end by a detachable support.

7. The combination, with a tank or container, of a central suspended spider or support and a number of breakers, said breakers resting at one end upon said spider and hinged or pivoted at their other end.

8. In an apparatus for extracting oil from seed, the combination, with a tank or container, of one or more pivoted breakers constructed to convey and discharge steam within the tank or container.

9. In an apparatus for extracting oil from seed, the combination with the stationary tank or container, of the breaker O and devices for suspending it from the top of the tank.

10. The combination with a tank or container, of a number of breakers converging toward and supported by a spider K, or its mechanical equivalent, said spider constructed to be dropped in such a manner as to release its support of said breakers.

11. A spider, K, or its mechanical equivalent detachably suspended within the tank or container A.

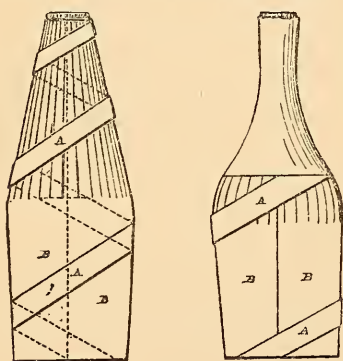
245,633.—**Process of Manufacturing Oleaginous Mordants.**

Armand Müller Jacobs, Moscow, Russia, assignor to Abraham Garrison Burtnett, Bronxville, N. Y. Filed May 12, 1881.

Claim.—The process herein described of producing an oxyoleic alkali to be used as a mordant in turkey-red dyeing, consisting in treating all kinds of vegetable and animal oils, fats, or oleic acid with sulphuric acid, then adding double the quantity of cold water, whereby sulpholeic acid is formed, which is permitted to settle and separate from the aqueous liquid, upon which this sulpholeic acid is boiled with from three to six times its quantity of distilled water until the fatty acids and the sulphuric acid have been completely separated and the former float on the watery fluid, which is then poured off, upon which the fatty acid (now mainly ricinoleic acid) is repeatedly boiled with fresh water, is then separated from the solid parts, and is mixed with cold water and enough alkali to neutralize or produce a slight alkaline reaction.

245,644.—**Bottle-Wrapper.**

Bennett D. Marks, Louisville, Ky.
Filed Jan. 14, 1881.



Claim.—As a new article of manufacture, a bottle-wrapper consisting of a veneer of wood, B, which has its upper end slitted, and the strips, D, secured to its inner side at a suitable distance apart, in combination with the strip of paper, A, which is secured to the veneer at one of its lowest corners, and then wrapped spirally around the outside of the wrapper and fastened to the veneer or the bottle at its upper end.

245,661.—**Manufacture of Potassium Ferrocyanide.** Theodor Richters, Breslau, Prussia, Germany. Filed Oct. 25, 1880.
Patented in France and Belgium, September 20, 1880.

The process consists in moistening nitrogenous substances with carbonate of potash or a mixture containing the same; then drying them without combustion while in contact with carbonic acid; then heating them sufficiently in a retort or other suitable vessel to gasify and drive off all volatile ingredients; then washing or boiling the residuum with iron, and finally separating the prussiate of potash from the solution in any convenient manner.

245,698.—**Composition for Lubricating Purposes.** Stephen Broadbent, Sr., Baltimore, Md. Filed June 24, 1881.

Claim.—The composition consists of cold water and carbonate of magnesia, nitrate of baryta, refined borax, calcimine, and Epsom salts, in the proportions named for the different oils, increasing or diminishing the proportions of the ingredients for either animal, vegetable or mineral oils as particular oils may require.

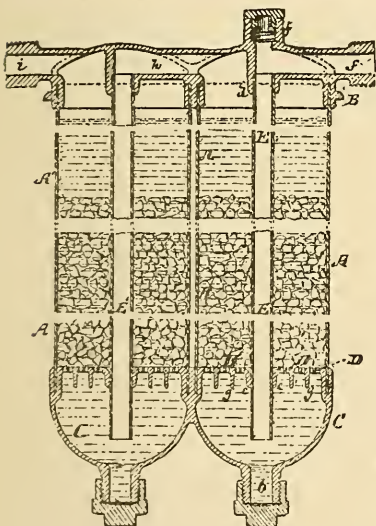
245,699.—**Manufacture of Hydraulic Cement.** Walter J. Budington, Pittsfield, Mass. Filed July 11, 1881.

Claim.—A cement made of white marble of the second formation and blue clay, mixed in the proportions and in the manner herein set forth.

245,701.—**Thickener for Mordants and Colors.** John Burton, Geneva, Ill. Filed March 128, 1881.

Claim.—In the process of printing calicoes, the addition of glucose to the mordants and colors to prevent the same from spreading, to render the colors bright, and to give body to the cloth.

245,735.—**Apparatus for Washing Carbonic Acid Gas.** John Matthews, New York, N. Y. Filed April 18, 1881.



Claim.—1. A gas-washing apparatus composed of the outer cylinder, A, inner vertical tube E, head, B, having pipe, *f*, bottom, C, and diaphragm, D, the pipes E and *f* being in communication within the head B.

2. In a gas-washing apparatus, the diaphragm, D, adapted to support the chips of marble and to permit the ascent of the gas through small holes formed in it, said diaphragm being provided on its lower face with series of ribs, *g*.

3. The duplex gas-washing apparatus constructed of the head, B, bottom, C, and of two or more cylinders, A A', the head, B, being made in one piece and the bottom, C, also in one piece.

4. In a gas-washer having a series of cylinders, A A', the head, B, constructed to contain within it the connecting-passages *f*, *h* and *i*.

245,750.—**Manufacture of Sulphate of Alumina.** Conrad Semper, Philadelphia, Pa., assignor to Harrison Bros. & Co., same place. Filed June 8, 1881.

Claim.—The process of manufacturing a white sulphate of alumina or aluminous cake from ferruginous aluminous material, which consists in treating a solution of ferruginous sulphate of alumina in a finely-divided state or in spray with sulphurous acid or sulphuretted hydrogen.

245,765.—**Extracting Oily and Greasy Matter from Cotton Waste.** Chas. T. Bastand, London, England. Filed June 7, 1881. Patented in Great Britain, Nov. 13, 1880.

This process consists first in passing bisulphide of carbon up through the waste, then heating it until the grease is softened, then drawing off the bisulphide of carbon and dissolved greasy matter to a still, and then repeating the above steps until all the greasy matter is extracted, and finally distilling the bisulphide of carbon from the greasy matter and any remaining traces from the waste, and condensing and saving the vapors.

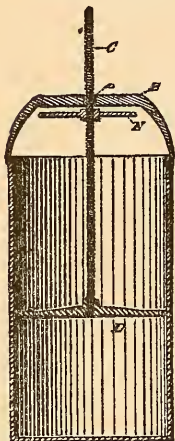
245,952.—**Manufacture of Plastic Compounds from Pyroxyline.** Samuel J. Hoggson and George C. Pettis, New Haven, Conn. Filed April 13, 1871.

Claim.—The new material herein described as "rehydrogenized pyroxyline," when treated with hydrochlorate of ammonia, muriate of ammonia, or any of the ammoniacal salts or their equivalent.

245,955.—**Manufacture of Soap.** Benno Jaffé and Ludwig Darmstaedter, Charlottenburg, Prussia, Germany. Filed June 9, 1881.

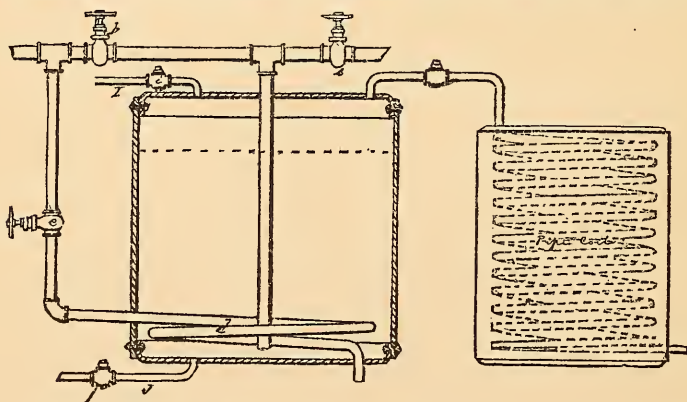
Claim.—The process of salting soap with sulphate of soda or other sulphate for the purpose of obtaining a waste lye from which glycerine is produced.

246,054.—**Paint Container.** Edward P. Williams, Cleveland, Ohio. Filed June 18, 1881.



Claim.—The combination, with the container A and arch B, the latter provided with hooked ends, which are secured in openings formed in upper edge of container A, of the piston D, screw-rod C, rigidly secured at its lower end to the piston, and its upper end inserted through an opening in the arch, and hand-nut E, located on the screw-rod between the arch and paint container.

246,075.—**Purifying Vegetable Oils and Separating the Same from Solvents.** Francis X. Byerley, Cleveland, Ohio. Filed July 29, 1881.



Claim.—1. The method of effecting or assisting the removal of water from an emulsion or intimate mixture of oil and water by passing currents of air through the said emulsion.

2. The method of decomposing an emulsion or intimate mixture of oil and water by heating the same and passing currents of air through the said mixture.

3. The process of purifying vegetable oils consisting in passing free steam through and into intimate contact with the body of the oil, and in combination with that operation, as a concomitant or subsequent step in the purification, forcing currents of air through the oil.

4. The process of treating oils that have been extracted by a solvent, consisting in driving off the solvent, and at the same time coagulating the albuminous matters by passing free steam through and into intimate contact with the body of the oil, and removing the water from the emulsion or mixture of oil and water resulting from the steaming operation by currents of air, or by the combined action of heat and air currents.

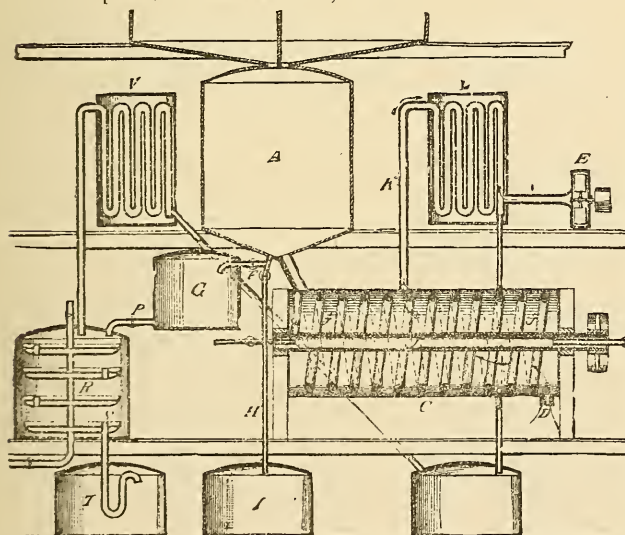
246,096.—**Process of Solidifying Crude and Refined Petroleum.** Peter Ditmar, St. Petersburg, Russia. Filed April 4, 1881.

Claim.—The mode herein described of solidifying liquid hydrocarbons—such as crude or refined petroleum, naphtha residues and the like—by dissolving two to three per cent. of tallow soap in the hydrocarbon under the action of heat.

246,158.—**Process of Manufacturing Glue, &c.** Emil Lesser, London, County of Middlesex, England, assignor of one-fifth to Frank A. Abraham, same place. Filed Nov. 9, 1880.

Claim.—The process of manufacturing gluein herein described, consisting of the following steps, viz.: first, making a compound of potato-starch and carrageen moss or gum-dragon; second, extracting the gluten of this compound by the action of alkalies; third, neutralizing the resulting products by acids; and finally, adding thereto vegetable acids to retain the original strength, volume and glutinous property of the compound, either for preserving the brightness of colors, when used in sizing bleached goods, and dextrine, chloride of magnesium, and glycerine, when used for painting.

246,172.—**Extracting Vegetable Oils.** William N. Matthews and Morris Lancaster, Richmond, Ind., assignors of one-third to William Mendenhall, same place. Filed March 20, 1880.



Claim.—1. The combination in an apparatus for reclaiming the solvent employed in extracting oil from vegetable meal, of the percolator-vessel A; which receives the meal from the soaking-tank, with the evaporator R, into which the combined oil and solvent of a proper consistency for separation is drawn from the percolator, the condenser V, for condensing the vaporized solvent, connected with said evaporator, the evaporator C, connected with the percolator for receiving the residuum therefrom, and

provided with a rotary coil of steam-pipe, said latter evaporator being also provided with an air-inlet, and being connected with the condenser L, into which the vaporized product is drawn by a current of air induced through the said evaporator and the condenser.

2. The combination, in an apparatus for reclaiming the solvent employed in extracting oils from vegetable meal, of the percolator-vessel A, for receiving the oil and meal, the evaporator R, connected with the percolator-vessel by means of a tank G, and pipe-connections, and adapted for receiving the combined oil and solvent of a proper consistency for separation, the condenser V, connected with the evaporator, the pipe H, for drawing off the thin solution from the percolator-vessel after the solution of the requisite consistency for separation has been drawn into tank G, the evaporator C, provided with a rotary coil of steam-pipe, the condenser L, connected with the said evaporator, and a fan arranged to induce a current of air through the evaporator and the condenser.

246,220.—**Package for Soap.**—Robert D. Schultz and John T. Hoge, Zanesville, Ohio. Filed July 27, 1881.

Claim.—A bar or cake of soap wrapped in a piece of cloth adapted to be put to some household use, such as a dish-rag, after having finished its mission as a wrapper.

- 246,182.—**Process of Preparing the Skins of Small Animals for the Manufacture of Gelatine.** Thos. P. Milligan, South Orange, and Isaiah Dennis, Newark, N. J.; said Dennis assignor to said Milligan. Filed June 14, 1881.

Claim.—The process herein described for preparing carotated fur pelts, as the skins of the cony, hare, nutria, muskrat, rabbit and similar small animals, for the manufacture of gelatine, which consists in soaking the skins soft in water, washing them in a solution of soda and lime, in about the proportions set forth, washing out the soda solution from the skins, and stirring them with a solution of alum in about the proportions set forth.

- 246,221.—**Azo Color.** Julius Schuncke, Ludwigshafen-on-the-Rhine, Bavaria, assignor to Badische Anilin und Soda Fabrik, Mannheim, Germany. Filed July 9, 1881.

Claim.—As a new article of manufacture, the garnet coloring matter, which I term "archil-red," produced by the action of the diazo compound of amido-azo-xylode upon an alkaline solution of beta-naphthol bisulpho-acid, substantially as described, or by any other means which will produce a like result.

- 246,260.—**Compound for Preserving Hides and Skins.** Jean Wickersheimer, Berlin, Germany. Filed Sept. 29, 1880.

Claim.—A compound for protecting raw skins and hides; consisting of methyl-alcohol, carbolic acid and thymol, and a solution of common salt, saltpeter and alum, alum being the chief ingredient.

- 246,262.—**Method of or Process for Manufacturing Glucose from Grain.** Horace Williams and John L. Alberger, Buffalo, N. Y. Filed Oct. 28, 1880.

Claim.—1. The following process of manufacturing glucose from grain, viz.: first, cooking the meal under steam-pressure in a solution of acid and water just strong enough to quickly convert the sugar-producing elements of the grain into soluble dextrine and to coagulate the gluten and albumen, but not strong enough to convert the dextrine into sugar; second, filtering the solution thus obtained for the purpose of separating from it the gluten, albumen and fibrous matter of the grain; third, increasing the acid in the filtered solution and raising the temperature thereof until saccharification ensues.

2. The following process of making animal food from the refuse of the grain used in manufacturing glucose: first, filtering the coagulated gluten, albumen and fibrinous matter from the primary solution of soluble dextrine, acid and water; second, treating the gluten, albumen and fibrine thus obtained with a weak solution of alkali and water or the purpose of neutralizing the acid; third, washing the gluten, albumen and fibrine with hot water for the purpose of cleaning and purifying them.

3. The new article of manufacture, consisting of animal food composed of the cleansed or purified gluten, albumen and fibrine, constituting the refuse of the grain used in the manufacture of glucose.

- 246,272.—**Azo Coloring Matter.** Heinrich Baum, Höchst-on-the-Main, Germany, assignor to Farbwerke, vormals Meister Lucius & Bruning, same place. Filed June 20, 1881.

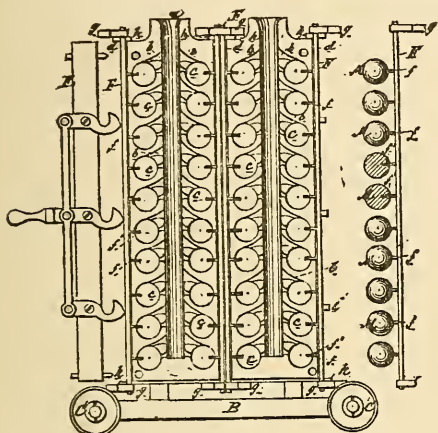
Brif.—This new red coloring matter is produced by the reaction of diazo benzole sulphionate of sodium upon a solution of beta-naphthol monosulphate of sodium.

- 246,327.—**Methyl-Blue Color.** Carl A. Martins, Berlin, Prussia, Germany. Filed March 7, 1881.

Claim.—1. The above-described process for the manufacture of a blue coloring matter by reducing the so-called "Orange III," with sulphohydrate of ammonia and oxidizing it afterward by means of perchloride of iron.

2. The above-described blue coloring matter produced by the reduction of methyl-orange No. 3 by the action of sulphohydrate of ammonia thereon and afterward oxidized by the action of perchloride of iron.

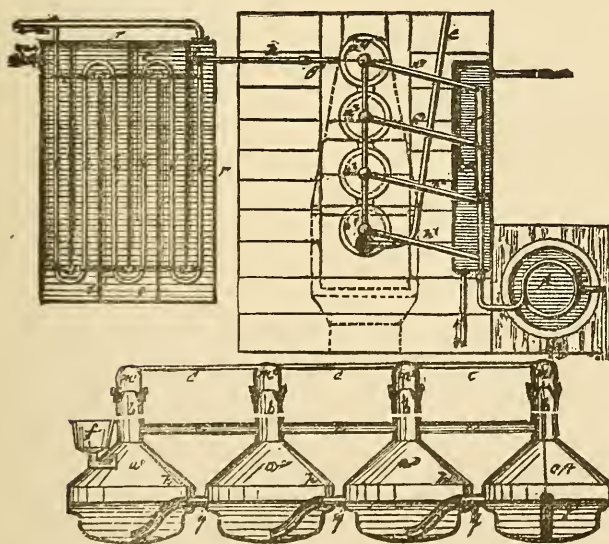
246,349.—Apparatus for the Manufacture of Alkali Balls. Minard M. Smith, New York, N. Y. Filed December 27, 1880.



Claim.—1. In the manufacture of alkali balls, the combination, with the bars F, of the screw-pointed pins *f*, substantially as herein shown and described, whereby wireless balls may be manufactured, as set forth.

2. The combination, with the flask A, provided with grooves *d d*, of the bars F, provided with lateral screw-pointed pins *f*.

246,396.—Apparatus for Concentrating Sulphuric Acid. Casar Kolbe and Theodore Lindfors, St. Petersburg, Russia. Filed June 15, 1881. Patented in Russia April 3, 1881.



Claim.—1. An apparatus for concentrating sulphuric acid, consisting of a series of platinum-retorts arranged on a plane and connected by pipes which extend from the bottom of one retort to a higher point of the next adjoining retort whereby an equilibrium of level is obtained in all the retorts.

2. The combination, in an apparatus for concentrating sulphuric acid, of the retorts *a*, connected by pipes *g*, and having necks *b*, with sealed hoods *m*, the necks and hoods being connected by pipes *c c*.

3. In an apparatus for concentrating

sulphuric acid, a series of retorts *a*, having connecting siphon-pipes *g*, and a discharge-pipe *g'*, the pipes *g g'* being provided at the inside of the retorts with short vertical vapor-pipes *h*.

4. In an apparatus for concentrating sulphuric acid, the combination of a series of retorts *a*, connected by pipes *g* with a discharge-pipe *g'*, tube *k*, vertical vapor-discharge pipe *l* and cooling coils *i*.

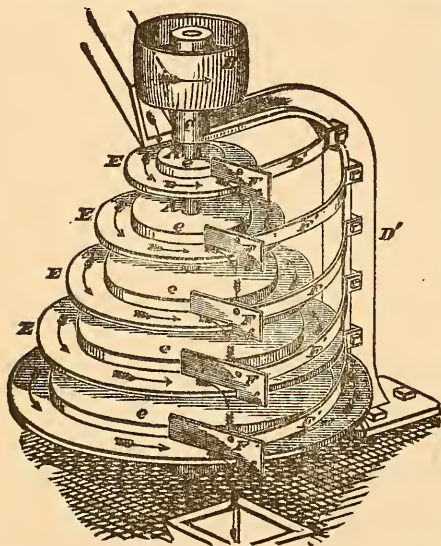
246,426.—**Veterinary Remedy.** Edmund J. Smith, Westport, N. Y., assignor of one-half to George W. Pattison, same place. Filed March 26, 1881.

Claim.—The herein-described composition of matter, to be used for the curing of wounds, bruises, sores and injuries of horses and all other animals, as above-named, consisting of blue vitriol, boiling water, verdigris, gunpowder, soft soap and spirits turpentine.

246,532.—**Lubricating Compound for Car-Axles, &c.** George H. Merrill, New York, N. Y. Filed March 12, 1881.

Claim.—The combination of tallow, rosin, the settling in the still after the distillation of petroleum, which is known as "petroleum-tar" or "residuum," lime and water, which form an alkali and graphite.

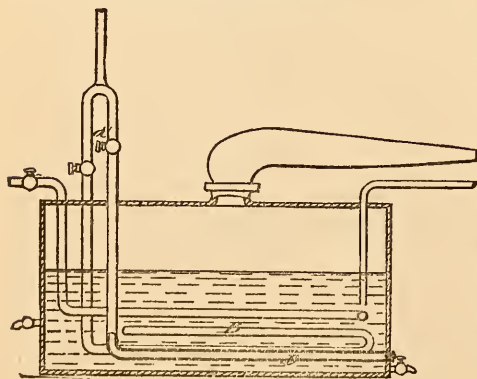
246,761.—**Conveyer and Cooler for White Lead.** Wm. H. Gregg, St. Louis, Mo., assignor to the Southern White Lead Company, same place. Filed June 17, 1881.



Claim.—1. As a conveyer and cooler for white lead, two or more revolving disks, differing in diameter, as described, and combined with two or more inclined scrapers.

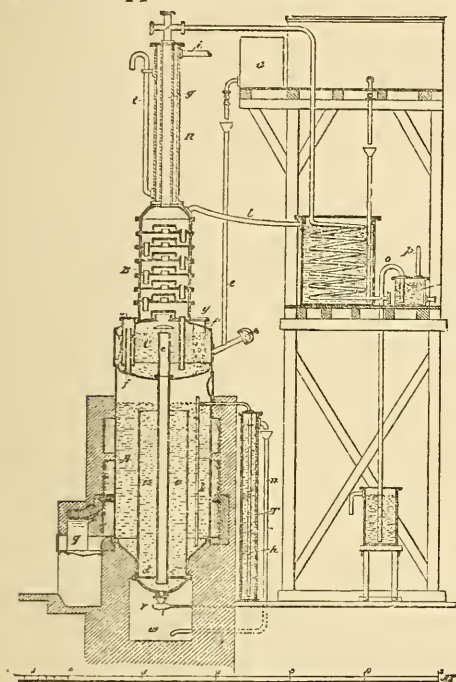
2. The combination of shaft A, adapted to rotate disks E, having shoulder *e*, and inclined scraper, F on spring-arms F¹, whose outer ends are secured to the bracket D¹, or its equivalent.

246,793.—**Process of Distilling Alcohol.** Charles W. Lawrence, New York, N. Y. Filed April 14, 1881.



* *Claim.*—A process for obtaining refined and odorless spirit direct from the still, said process consisting in charging the still with spirit-producing material and powdered charcoal, then stirring and heating the mass by means of steam, as shown, whereby the operations of distilling and rectifying are accomplished, at one operation, the empyreumatic oil being retained by the charcoal in the still.

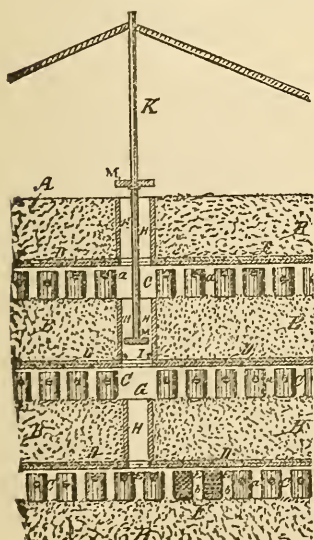
246,949.—Apparatus for the Continuous Distillation of Ammonia. Hermann Grüneberg and Jacob Gareis, Kalk, near Cologne, Prussia, Germany. Filed Feb. 18, 1881. Patented in Germany, May 21, 1878, and Oct. 29, 1879; in Belgium, Dec. 16, 1878; in England, Dec. 11, 1879, in Italy, March 31, 1880.



Claim.—1. In an apparatus for the continuous distillation of ammonia from crude ammoniacal liquors, the combination of a boiler, A, a decomposing vessel, C, in communication with the boiler, by a suitable pipe or pipes, and into which lime-milk is introduced from a reservoir, G, and a distilling column, B, which first receives the liquor to be treated.

2. In combination with the boiler, A, the decomposing vessel C, and distilling column D, the tube or cylinder *a*, projecting through the bottom of A, and the overflow pipe *c b*, leading from the upper part of C, to the bottom of *a*.

247,105.—Ventilating Apparatus for White Lead Stacks. James B. Pollock, Port Richmond, N. Y. Filed June 23, 1881.



Claim.—In a white lead corroding stack or bed, the combination with the tiers C and boards D, of the boards H, lining the central ventilating flue G, which are made in sections, extending from the boards D of one tier to the bottom of the next tier above, and provided with a large outer valve and smaller inner valve M.

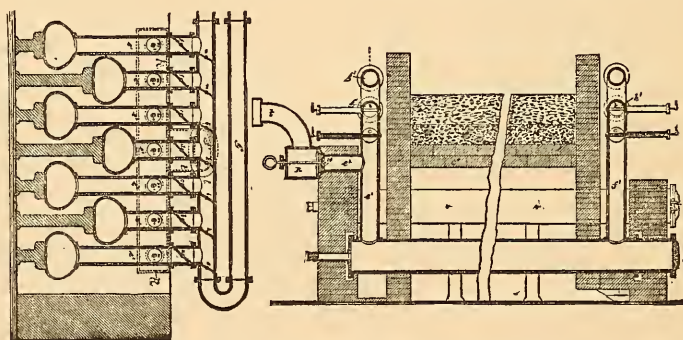
- 246,816.—**Method of Utilizing the Residua of the Acid Treatment of Grain and other Materials for the Manufacture of Alcohol.** Eugène Porion and Louis Mèhay, Wardrecques, France. Filed Aug. 16, 1880. Patented in France, March 27, 1880, and in Belgium, July 2, 1880.

Claim.—The within-described method of utilizing the solid residual matter resulting from the acid treatment of grain and other substances for distillation, consisting in subjecting said residua to pressure in filter-presses and obtaining therefrom both oil and oil-cake.

- 246,823.—**Cork-Cutting Machine.** Jacob Schlachter, Philadelphia, Pa. Filed Oct. 11, 1880.

Brief.—A pyramidal blank is cut from the strip of cork. The separated blank falls upon a table, making a quarter-turn, so that the trimming-knife shall start its work upon a cut and not upon a natural side of the blank. The blank is then clasped between the centers and makes two revolutions, one turn against a slicing-knife removing the corners and rough surface, the next giving a trim or finish to the cork. The reciprocating frame which carries the cutting-knives is duplex, so as to cut a cork as it moves each way, and is connected to the centers to cause them to rotate, and moves all the operative parts of the machine.

- 247,046.—**Process of an Apparatus for Making Ammonium Sulphate.** Hubert Grouven, Leipsic, Saxony, Germany. Filed June 6, 1881.



Claim.—1. A series of horizontal retorts, in combination with the ranges of vertical pipes *e' f'*, connecting pipes *g' h'*, gas chest R, pipes *c'*, and valves, adapted to combine any desired number of retorts in a single circulating series.

2. The method herein specified of treating peat or bog containing water for the production of gas and the reduction of the material to ashes, consisting in introducing such peat or bog successively into retorts in a series and causing the vapors and gases to pass through the previously-charged retorts and be delivered from the retort containing the charge that has been longest under the action of heat.

3. The combination, in an apparatus for the conversion of moist peat or bog into gases, of a range of retorts, a vertical pipe near each end of each retort, and a valve in the same, connecting pipes for the ranges of vertical pipes, and valves in said connecting pipes between each two vertical pipes.

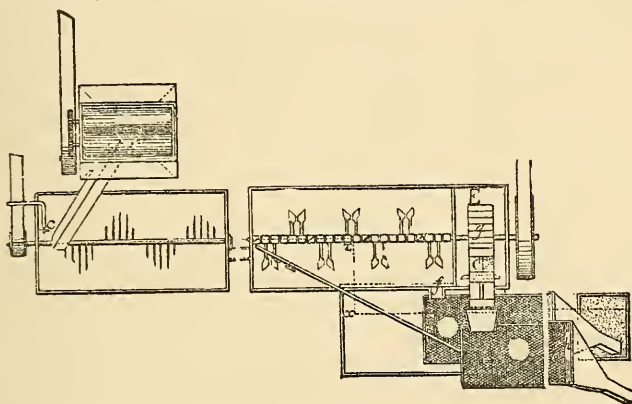
4. The method herein specified of treating animal refuse rich in nitrogen for conversion into carbonate of ammonia, consisting in heating the same in a retort and passing the gases through similar retorts in succession in the order in which they have been exposed to the action of fire for a longer time.

5. The combination, in the ammonium furnace, of a series of vertical retorts, with lateral openings, with an inclosing case having a chamber *t'*, for the introduction of the gases, and the discharge pipes and stoppers or valves.

6. A vertical range of retorts having inlet and discharge caps and lateral openings near the bottom, in combination with an inclosing case for heat to act on the

retorts, a gas-chamber, *t'*, connecting with the lateral openings into the retorts, valves to close the lateral openings, an escape pipe from the top of each retort, a gas chest or pipe, *y'*, and valves *y*².

247,152.—Process of Treating Corn in the Manufacture of Starch, Glucose, and other Products therefrom. Arno Behr, Jersey City, N. J. Filed July 27, 1881.



Claim.—The process of treating corn in the manufacture of starch, glucose, and other products therefrom, herein described, which consists in mixing with corn, which has been softened and crushed, sufficient water to form a mixture of such density that the germs of the corn will tend to separate from the hulls and other heavier portions and rise to the surface of the mixture, and in mechanical stirring such mixture in a separating tank or compartment provided at the top with a suitable chute, and thereby causing the germs and pieces of germs to be carried off in a surface-current caused to overflow through the chute by the influx of crushed corn and water into the separating-tank, and in removing the hulls and adherent matter from the lower stratum of the mixture by mechanical means, the materials removed from the separating-tank being respectively screened in the usual manner, and the purified mixture of the mealy parts of the corn and water being collected in a suitable reservoir.

247,153.—Apparatus for Treating Corn in the Manufacture of Starch, Glucose, and other Products Therefrom. Arno Behr, Jersey City, N. J. Filed August 2, 1881.

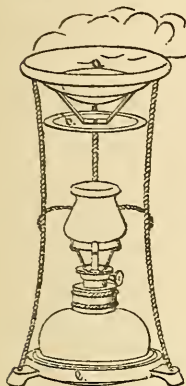
Claim—1. A separating tank or compartment provided with a stirrer, and having a chute or opening in its wall for fixing the direction of the overflow from the separating-compartment, in combination with an inclined vibrating sieve for screening the germs carried off in the overflow, and a trough or reservoir for receiving the starch-milk which drains through the meshes of such sieve, and means for mechanically removing from the lower stratum of the mixture in the separating-tank the heavier portions of the corn, consisting of the hulls and matter adherent thereto.

2. A separating-compartment substantially such as described, and a settling-compartment and means for gradually pushing the heavier matters from the lower part of the separating-compartment into the settling compartment through a suitable opening in a vertical position which separates the two compartments from each other, in combination with an endless elevator-chain provided with perforated buckets, and an inclined vibrating sieve for screening the heavier matters brought up by the elevator buckets and discharged upon such sieve, water-spraying pipes for washing such heavier matters, and a trough or suitable vessel beneath such sieve for receiving the wash-water and other drainage through the sieve, and a pipe or pipes for conducting such drainage to the separating-tank or to a mixing-tank provided with a stirrer for mixing the crushed corn with water preparatory to its being fed into the separating-tank.

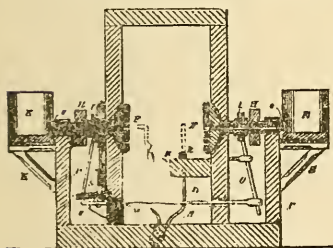
3. The combination, in an organized system of apparatus substantially such as described, of a mill for crushing corn, a mixing-tank provided with a stirrer for mixing the

247,430.—Method of and Apparatus for Volatilizing Cresylic Acid.

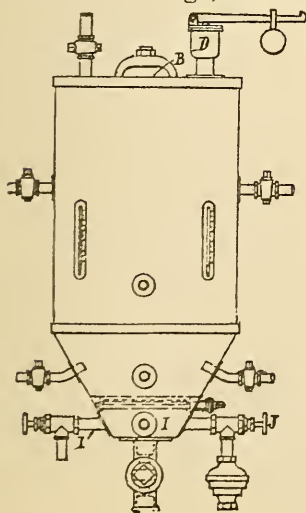
Elias H. Carpenter, Providence, R. I., assignor to James H. Valentine, same place; said Valentine assignor of one-half to George Shepard Page, Stanley, N. J. Filed September 26, 1879.



Brief.—The stand supports a deflecting plate beneath the vaporizer, which, by its radiation, contributes the necessary heat for volatilizing without burning.

247,489.—Machine for Painting Barrel Heads. Chas. J. Everhard, Canton, assignor to himself and Thomas A Howard, Cleveland, Ohio. Filed April 7, 1881.

Claim.—In a barrel-painting machine, a brush having its bristles arranged upon a flat surface and radiating in a curved or tarantula form from a common center, and having the ends of each row extending beyond the body of the brush in combination with means for supplying paint to the brush.

247,573.—Apparatus for Making Glue.—Thomas P. Milligan, South Orange, N. J. Filed May 21, 1881.

Claim.—1. In combination with an air-tight vessel for reducing glue stock provided with a manhole and outlets for withdrawing the product, a series of steam jets inserted at various points in its shell and provided with regulating valves, as herein described, and a series of thermometers, adapted to indicate the temperature at various points affected by the jets.

2. In combination with an air-tight vessel provided with a manhole and outlets for the purpose set forth, a series of steam jets inserted in the shell of the vessel at various points, and a grate arranged and operated to sustain the stock above the level of the outlets.

3. In combination with an air-tight vessel provided with a manhole and outlets for the purpose set forth, a series of steam jets inserted in the shell at various points, a grate provided with means for opening or dumping it to release the entire contents from the vessel, and a waste cock beneath the grate, to discharge or retain the contents at pleasure.

4. In combination with a glue boiler having a series of outlets and a grate arranged to sustain

the stock above their level in the manner described, a pipe and cock for each outlet and a filter applied to each.

5. In a glue boiler, the combination, with an air-tight vessel having a manhole and outlets for the purpose described, of a grate arranged above the outlets, one or more steam jets inserted in the vessel near the upper surface of the grate to heat the lower part of the contents, one or more steam jets inserted near the middle of the height to heat the body of the contents, a steam inlet near the top to furnish pressure when required and a safety valve to promote circulation and indicate the pressure.

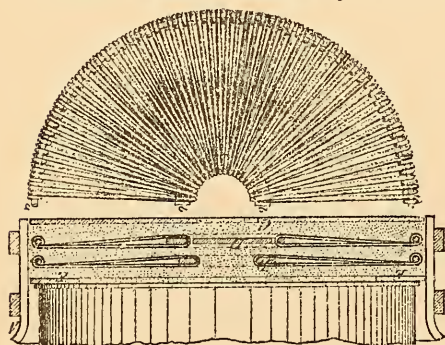
247,597.—**Manufacture of Printing Ink.** Charles T. Bastand, London, England. Filed July 5, 1881. Patented in England, May 13, 1881.

Claim.—As a new article of manufacture, printing ink composed of the product obtained from engineers' cotton waste, added to lamp or other black, resinous material, soap, and indigo, or other like pigment.

247,720.—**Hair Tonic.** Caroline Weisser, Los Angeles, Cal. Filed July 15, 1881.

Claim.—The composition of matter to be used as a hair restorer, consisting of a decoction of dried olive leaves, marjoram leaves, marjoram roots, and of glycerine.

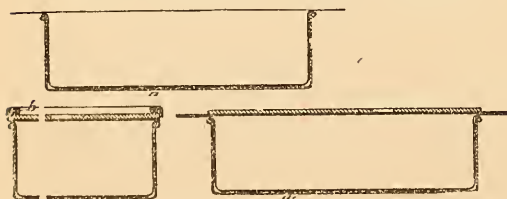
247,771.—**Wire Mat for Extracting Oil, &c.** Harrison Loring, Boston, Mass. Filed May 25, 1880.



Claim.—1. The improved wire mat embracing in its construction a number of bundles or layers of wire, each bundle or layer being arranged radially and fast at the center and at the circumference of the mat.

2. In combination, the curb, the plunger, and the seal-ring.

247,793.—**Refining Camphor and Apparatus Therefor.** William H. Atkinson; London, England. Filed Mar. 28, 1881.



Claim.—1. The described improvement in the process of refining or subliming camphor, consisting in refining the same while surrounded by sheet metal or alloy, which may afterward be readily stripped from the refined cake.

2. The improved apparatus for refining or subliming camphor, consisting of a box or vessel having a lining of sheet metal or alloy, and with a cover having a lining of sheet metal or alloy, the projecting edges of these two linings being adapted to be lapped or doubled one over the other, to form a tight joint.

247,479.—**Remedy for the Cure of Scab in Sheep.** Charles E. Brittain, Joseph Rolley and William McGeorge, Springfield, Cal. Filed Oct. 27, 1879.

Claim.—The ointment or remedy for scab in sheep before described, consisting of lard, rosin, spirits of turpentine, red precipitate, quicksilver, oil of smoke and borax.

247,812.—**Stove Polish.** Harry Einstein, Philadelphia, Pa., assignor to the Einstein Manufacturing Company (Limited), same place. Filed June 23, 1881.

Claim.—The composition to be used as a liquid stove-polish, consisting of water, gelatine, nut-galls, sulphate of iron and plumbago.

247,818.—**Medical Compound.** Josiah C. Gilman, Massena, N. Y. Filed March 21, 1881.

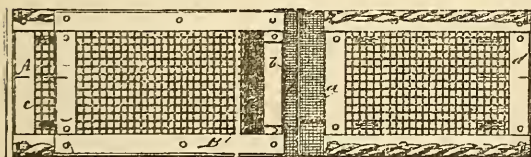
Brief.—Steeps balm-of-Gilead buds in alcohol to extract their strength. One part of this is added to two hundred and eighty-eight parts of the oil obtained by heat from yolk of eggs, and the mixture is applied as a mild irritant to ruptures.

247,957.—**Refining Starch-Sugar.** Franz Soxhlet, Munich, Bavaria, Germany. Filed May 10, 1881.

Claim.—1. The method of purifying starch-sugar (glucose) by dissolving the foreign substances, which, for the most part, are unfermentable, and inclosing the solid sugar particles, with the aid of ethyl or methyl alcohol, and then separating the thin liquid syrup from the solidified glucose by means of presses, centrifugal machines, or other suitable appliances.

2. The method of preparing solid transparent starch-sugar (glucose) or dextrose hydrate ($C_6H_{12}O_6 + H_2O$) with a distinct crystalline structure by making a concentrated starch-sugar (glucose) and allowing the same to solidify at a temperature above 30° centigrade (86° Fahrenheit).

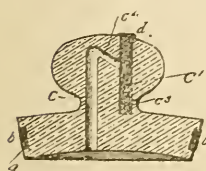
248,386.—**Oil-Press Mat.** George O. Baker, Selma, Ala. Filed Aug. 16, 1881.



Claim.—In an oil-press mat, the combination, with the outer wooden leaves A, lined with wire cloth and connected by flexible joint a, of the middle leaf or leaves B, of wire cloth, secured to

flexible joint a, whereby the meal bags are prevented from slipping and the expressed oil allowed to escape.

248,360.—**Stopper for Jars, Bottles, &c.** George A. Smyth, Newport, R. I., assignor of seven-elevenths to Raphael Pummelly, same place, and Charles F. Johnson, Jr., Owego, N.Y. Filed May 19, 1881.



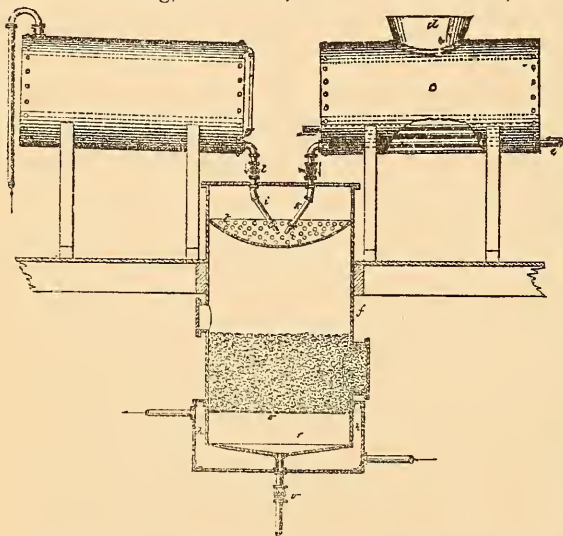
Brief.—The filled and stoppered jar is bathed in boiling water to sterilize contents and stopper. Contents are preserved without using any plug to close the sinous passage. Plug used to prevent escape of liquid during transportation. Outlet is for drain of moisture caught from the air. When there is a stop cock at the bottom of vessel the plug is used for an air vent.

Claim.—A cork, stopper, or cover for bottles, jars, &c., provided with a sinous passage through it, in combination with a filter of asbestos or equivalent air filtering material arranged within the stopper or cover.

247,958.—Refining and Crystallizing Starch-Sugar. Franz Soxhlet, Munich, Bavaria, Germany. Filed May 10, 1881.

Claim.—The production of anhydrous crystalline starch-sugar (dextrose-anhydride $C_6H_{12}O_6$) by the crystallization of a mixture of starch-sugar (glucose) and wood-spirit at the above-mentioned temperature.

248,735.—Process of an Apparatus for Purifying Wax, Fats or Rosins. Daniel T. Gray, Brooklyn, assignor, by mesne assignment, to John A. Stoutenburg, New York, N. Y. Filed Jan. 24, 1881.

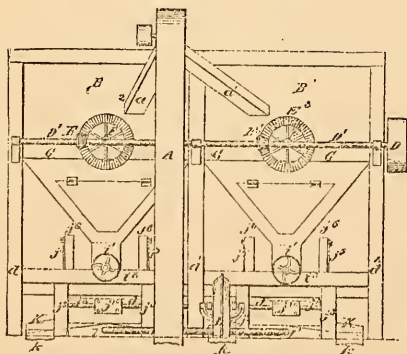


Claim.—1. The improvement in the process of purifying wax or equivalent material, consisting in causing a stream of wax, while in a fluid or melted state, and a stream of naphtha or other solvent to flow together, and thus form an intimate mixture or solution, and thence pass through a filter.

2. An improved apparatus for purifying wax or similar material, consisting of a vessel for holding the wax in a liquefied or melted state, and a distinct vessel for holding naphtha or other solvent, in combination with a suitable filter and connections from said tanks to said filter, whereby the wax and solvent flow together into said filter, form an intimate mixture or solution, and thence pass directly through the filter.

3. In an apparatus for purifying wax or a similar material, the combination of the filter *f*, formed with a perforated partition, *t*, arranged above the filtering medium, with a space between the two, with a means, substantially as described, for furnishing a supply of the material to be filtered and the dissolving liquid, and arranged to discharge the same upon and through said perforated partition, whereby the material is thoroughly mixed before reaching the filtering medium.

248,788.—Machine for Separating Cottonseed. John C. Power, St. Louis, Mo. Filed Dec. 20, 1880.



Claim.—1. In a cottonseed separator, the combination of the conveyor, *A*, provided with spouts *a' a'*, bolting-chests *B B'* having the inwardly-inclining discharge-pipes *H H'*, terminating in the chute, *h*, reels *C C'*, shaft *C²*, strips *c c*, secured to the same, and the conveyors *I I*.

2. In a cottonseed separator, the combination of the conveyor *A*, provided with branch pipes *a a'*, bolting-chests *B B'*, having spouts *H H'*, reels *C C'*, and shafts *F F' G² C²*, with the conveyors *I I*, the pulleys *i i'*, the shakers *J J'*, having discharge-spouts *K*, fan *L*, having branch pipe *l l'* and flaring nozzles.

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248,904.—**Gum Substitute.**—George F. Wilson, East Providence, and Philip O'Reilly, Providence, R. I. Filed Feb. 27, 1879.

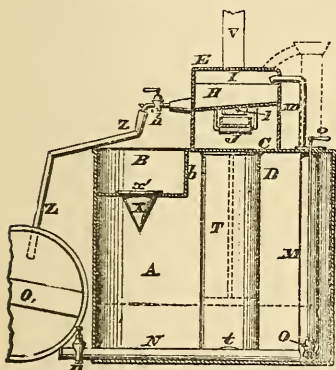
Claim.—1. The process of preparing corn-starch for the production of gum by treating the same with a solution of hydrochloric acid or its equivalent, to moisten the starch without forming a solution thereof, and then drying.

2. The method of converting starch into gum, the same consisting in exposing the starch in a continuous stream to the action of a suitable degree of heat, the starch during such exposure being moved forward constantly and with a regulated speed, and being also agitated, whereby all parts of the starch are evenly and uniformly roasted and all caking and burning avoided.

3. The process of making soluble gum from corn-starch by treating the same with hydrochloric acid or its equivalent, drying and roasting.

4. The process of manufacturing soluble gum, the same consisting in treating corn or other starch with hydrochloric acid or its equivalent, drying and roasting by heating and agitating the same in a continuous stream in a suitable vessel or casing.

248,956.—**Self-Measuring Oil Can.** Thomas Scantlin, Evansville, Ind. Filed March 14, 1881.



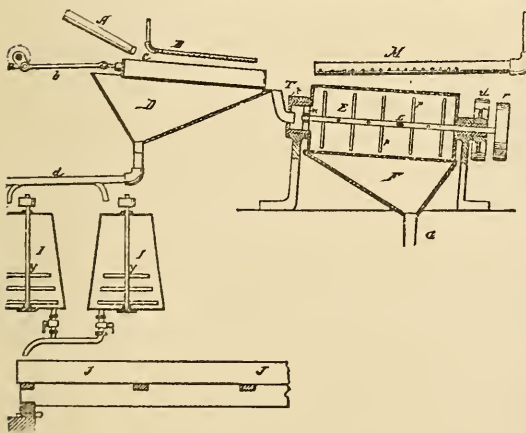
Claim.—1. The combination, in an oil-tank, of sink B, elevated receptacle E, and inclosed communicating chambers F, having discharge-faucets f.

2. The pit X, located in the sink B, and having an inlet, x, and closely fitting cup Y.

3. The tank A, provided at its upper end with a segmental chamber D, and sink, B, which latter has an imperforate floor.

4. In combination with the elevated measure-receptacle E and float-tube Tt, the top plate, C, having an opening, c, communicating with said tube.

248,973.—**Method of Treating Grain for the Production of Starch or Starch Sugar and Syrup, and Apparatus therefor.** Horace Williams and John L. Alberger, Buffalo, N. Y. Filed Sept. 30, 1881.



Claim.—1. The method of treating the grain for the purpose of obtaining the starch consists of the following steps in combination: first, soaking the grain in hot water, then grinding it in the presence of a stream of clean water, then separating the starch and gluten from the first grinding upon a fine separator of coarser texture, and separating the coarsely-ground grain and starch from the husks by the second separator, then passing the coarsely-ground grain with the husks into a second separator then passing the washwater from the second separator, including the coarse meal and starch carried off by it, into the reservoir supplying the mills with water, then treating the

starch-water in the receiver with alkali in the presence of agitation, then separating the starch from the gluten, &c., then washing the alkali out of the starch.

2. In the process of manufacturing starch from corn, the mechanical method of treating the husk of the corn after being soaked and wet-ground for the purpose of separating more perfectly the adhering meal and starch from the husk, which method consists of first delivering the whole product of the mill upon or into a fine separator under a spray of water, by which the starch is washed out, then passing the husk and coarse meal into a second coarser separator under a spray of water, by which the coarse meal and any remaining starch are carried through the meshes of the separator, the husk being delivered from the tail thereof, both separators being continually agitated.

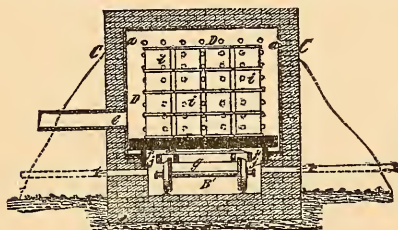
3. In the manufacture of starch from corn, the means, substantially herein described, of separating more perfectly the adhering starch and meal from the husk of the corn after being soaked and wet-ground, which means consist of a fine reciprocating separator, C, in combination with a coarser rotating bolting-machine, E, the two separators co-acting to receive, agitate, and discharge the starch, meal, and husks.

4. In the treatment of soaked ground corn in the manufacture of starch, the combination of a reciprocating separator, C, receiving alkaline tubes, I I, fitted with agitators y, a rotatory bolting-machine, E, fitted with an agitator and water-pipes, B M, the several parts being constructed and co-acting with reference to each other.

5. As an improvement in apparatus used in the manufacture of starch, the bottom of the starch-table, composed of vertical lamina of wood, for the purpose of avoiding the warping, slivering, and unevenness of the depositing surface.

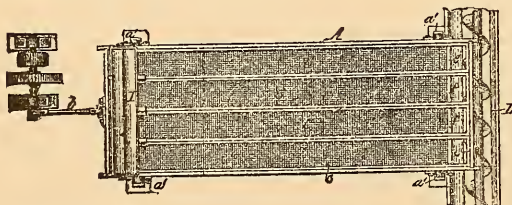
6. In combination with a separator, C, and a rotating bolting-machine, E, an intervening tank, X, provided with an agitator, and connected to both the reciprocating and rotating separator.

249,004.—The Art of and Apparatus for Making and Revivifying Bone-Black. Robert A. Chesebrough, New York, N. Y. Filed June 13, 1881.



Claim.—As an improvement in the art of making and revivifying bone-black, subjecting the bone or bone-black to the burning or reburning operation in pots or receptacles placed on a car or carriage which is run into and from the oven.

249,056.—Starch-Separator. Thomas A. Jebb, Buffalo, N. Y. Filed October 4, 1881.



opening *f*, for the discharge of the coarse offal, the combination, with the sieve-frame of the vibrating of rock arms *a*, supporting both ends of the sieve.

Claim.—The combination, with the main frame A, of a series of removable sieve-frames, C, arranged side by side in the main frame, and means whereby the frames C are secured in the main frame.

The combination, with the main frame A, of a reversible frame C, covered on its under side with bolting-cloth, and provided at each end with an

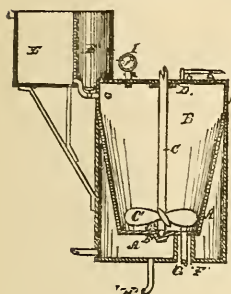
249,285.—Instrument for Transfusion of Blood. Eugene E. Allen, Grand Rapids, Mich. Filed June 23, 1881.



Brief.—The blood is forced forward in a rubber tube by means of rollers arranged in a box. The tube is furnished with inserting-points and a vent.

Claim.—1. In an instrument for transfusion of blood, an elastic hose, in combination with suitable means for giving the hose a sliding or moving pressure, to produce a continuous forward pressure of the blood into the receiving-vein.

- 249,256.—**Soap-Boiling Apparatus.** Alfred H. Pritchard, Detroit, Mich. Filed Jan. 20, 1881.



Claim.—1. In a soap-boiling apparatus, a closed steam-tight boiler for the soap ingredients, a steam-jacket surrounding the latter, and an agitator, the construction being such that the ingredients being boiled by the steam in the jacket themselves generate a pressure within the boiler without the introduction of steam from the boiler.

2. In a soap-boiling apparatus, a vertical steam-tight boiler for the soap ingredients and depending into a steam jacket, a vertical agitator located therein, steam packed where its shaft passes through the top-plate, and means for rotating the shaft.

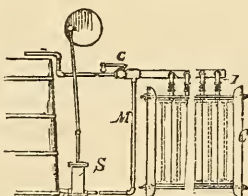
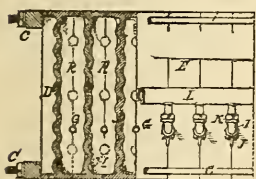
3. In a soap-boiling apparatus, a steam-tight boiler for the soap ingredients, a steam-jacket surrounding the same, reservoirs for the ingredients, and from which they may be passed through suitable valves into the boiler, and an outlet-passage leading from the valves and governed by a valve for discharging the soap.

4. In a soap-boiling apparatus, a vertical closed and steam-tight boiler surrounded by a steam-jacket, a vertical agitator-shaft passing through the top plate and provided at its bottom with a propeller-wheel agitator.

5. In a soap-boiling apparatus, a closed steam-tight boiler for the soap ingredients, a surrounding steam-jacket, an agitator, and a man-hole in the upper-plate, whereby ready access can be had to the interior at any time.

6. The combination, with a soap-boiler and a surrounding steam-jacket, of an open well, F, through which the soap-discharge pipe can be introduced without passing through the steam-jacket.

- 249,348.—**Apparatus for Filtering and Compressing Liquid-Suspended Colors into Pulp.** H. R. Haven, Chambersburg, assignor to the Trenton Iron Company, Trenton, N. J. Filed April 30, 1881.



Claim.—The improved color press and filter hereinbefore described, which consists of the combination of a vat for containing liquid-suspended colors, a combined pressing and filtering apparatus, and a pump adapted to suck the liquid-suspended color from the vat and distribute it under pressure into the filtering apparatus.

- 249,424.—**Paint for Ships' Bottoms and other Submerged Structures.** Thomas Trebell, Lime house, County of Middlesex, England. Filed June 28, 1881.

Claim.—The herein-described paint for the bottom of ships and other submerged structures, consisting of rosin-oil, black-lead, French chalk, white zinc, oxide of iron, and tallow mixed with turpentine, linseed-oil, rosin, Gallipoli oil, tallow, shellae dissolved in alcohol, Venetian red, red lead, zinc-paint, and tar-spirit.

- 249,429.—**Process of Manufacturing Phosphorescent Substances.** Orlando Thowless, Newark, N. J., assignor to himself and Edward L. Molineux, Brooklyn, N. Y. Filed July 5, 1881.

Claim.—1. The herein-described process for manufacturing phosphorescent materials, which consists in heating sea-shells red-hot, treating them while heated with a bath of brine, then, after removal from the bath, mixing sulphur and phosphide and sulphide of calcium therewith, and finally subjecting the mixture to a white heat.

2. The described process, which consists in placing clean and red-hot clam shells in a saturated solution of sea salt and then drying them.

- 249,478.—**Soft Soap.** Thomas W. Nichols, New York, N. Y. Filed Oct. 15, 1881.

Claim.—1. Charred alder bark, in combination with permanganate of potassium, ox-gall, arrowroot, beeswax, cantharides, glycerine, alcohol, sal soda, bar soap, and water, in the manufacture of soft soap.

2. Permanganate of potassium, in combination with charred alder bark, oxgall, arrowroot, beeswax, cantharides, glycerine, alcohol, sal soda, bar soap, and water in the manufacture of soft soap.

3. In the manufacture of soft soap, the combination of permanganate of potassium, charred alder bark, oxgall, arrowroot, beeswax, cantharides, glycerine, alcohol, sal soda, bar soap and water.

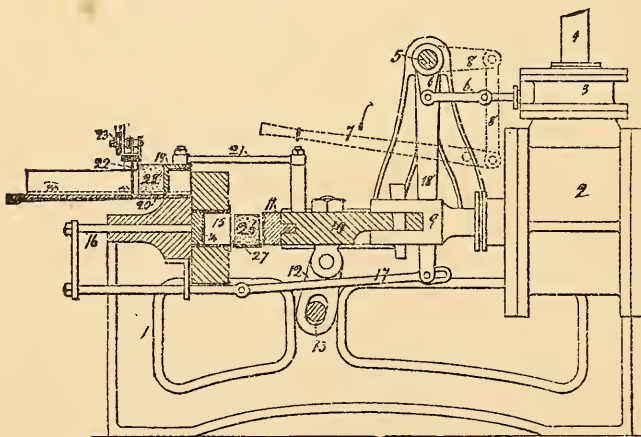
249,490.—**Explosive Compound.** Carl W. Volney, New York, N. Y., assignor to the Volney Chemical Company. Filed March 17, 1881.

Brief.—Saturates concentrated glycerine with hydrochloric acid gas, thereby converting it into propenylchlorhydrate or glycerine chlorhydrin, which is incorporated into a mixture of sulphuric acid and nitric acid, thereby forming monochlordinitrin or chlorpropenyldinitrate. This latter is combined with a nitrate or chlorate of any suitable alkaline metal or with nitrates and chlorates of same. Vegetable or fiber charcoal, or both, may be added.

Claim.—1. The mixture consisting of the substance known as and named "monochlordinitrin" or "chlorpropenyldinitrate," and a nitrate of potassium, sodium, barium, or any other suitable alkaline metal, in such equivalent quantities that thereby a mutual decomposition between monochlordinitrin and the nitrate can be effected.

2. The mixture of monochlordinitrin or chlorpropenyldinitrate with nitrates and chlorates of potassium, sodium, barium, or other suitable equivalent alkaline metals, and vegetable fiber or charcoal, or both.

249,532.—**Machine for Shaping Soap.** John O'Keefe and William Robertson, Liverpool, County of Lancaster, England. Filed Sept. 9, 1881. Patented in England, Nov. 18, 1880.



Claim.—1. The combination of two reciprocating shaping dies, the face of each die being a multiple of the figure to be produced, a die box, and an ejector and piston for actuating the respective dies.

2. The combination of two reciprocating shaping dies, a die box, a receiving table arranged in front of the die box, a piston for actuating one die, and an ejector, link, and rocking shaft for actuating the other die.

3. The combination of the reciprocating multiple-faced die for shaping the faces of a bar and a piston for actuating the same with a multiple cutter adapted to sever the bar into sections corresponding to the figures of the forming die, the cutting devices connected to and actuated from the piston of the shaping die.

4. The combination of the reciprocating die 11 and piston for actuating said die with the reciprocating die 14, and the ejector 16, slotted link 16, lever 18, and rocking shaft 5, for actuating the latter die.

5. The combination of the piston cross head 9 and guide 10 with the link 12 and pin 13.

6. The combination of the hand lever 7 with lever 18, for working the ejector mechanism 16 and 17, and with the lever 6, for working the valve in 3.

249,926.—**Coloring Matter.** Johannes H. H. O. Gurke, Höchst-on-the-Main, assignor to Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Dec. 11, 1880.

Claim.—As a new article of manufacture, the process for producing a bluish scarlet dyestuff or coloring-matter by the action of the disulphobeta-naphtholic sodium salt insoluble in alcohol on the diazoic derivative of para-amidocinnamic acid methylic ether, substantially as set forth.

249,553.—**Medicinal Inhaler.** Joseph W. Snyder, Philadelphia, Pa. Filed July 7, 1881.



Brief.—A receptacle for inhalants is incased on the edge of a pillow, so that patient may inhale during sleep.

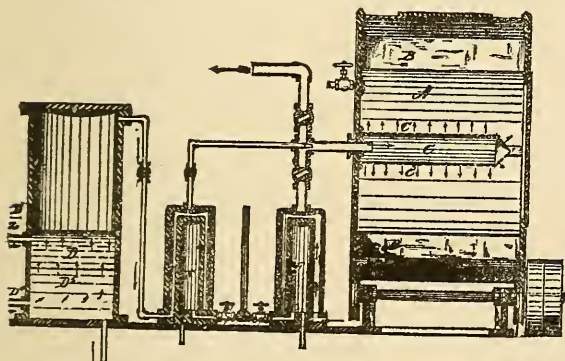
Claim.—1. A medicinal inhaler consisting of a pillow or pad provided near one or more of its extremities or

edges with an independent receptacle to contain and carry medicine.

2. A medicinal inhaler consisting of a pillow or pad provided near one or more of its edges with independent receptacles to contain and carry medicine, in combination with a valve, or its equivalent, to regulate and govern the quantity of said vapor.

3. A medicine receptacle or reservoir for an inhaler pad, consisting of a cup-shaped casing C, provided with an aperture c, and a broad flange, in combination with a valve D, a flattened receptacle or reservoir G, and a cap or cover F.

249,600.—**Drying Apparatus for treating Pyroxyline, Etc.** Jarvis B. Edson, Newark, N. J. Filed Sept. 14, 1881.



Claim.—1. The method of drying pyroxyline and other similar substances by the use of cold and intensely dry air, maintained at a temperature slightly above the freezing point and introduced through the material while in a finely divided condition, and thence discharged from the receiver.

2. The combination of a reservoir for cooling and drying the air, a heater for raising its temperature when desired, and the receiver for holding and agitating the material to be treated.

3. The combination of a revolving receiver having agitating devices, as described, with a perforated conduit and air-cooling apparatus.

4. The combination of a revolving receiver having lifting or agitating devices with an exhausting or suction apparatus.

5. The combination of the heating devices with a receiver having lifting plates or agitators and a suction or exhaust apparatus.

249,902.—**Varnish.** Martin Connelly, Philadelphia, Pa. Filed December 16, 1880.

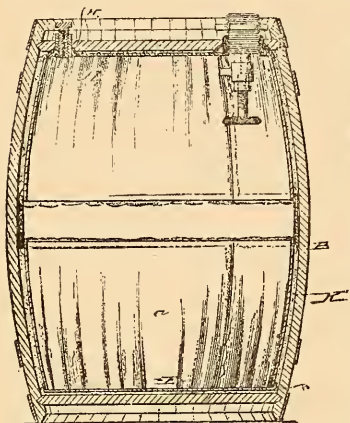
Brief.—The product of petroleum forming one of the ingredients of this varnish is an ingredient of a printing ink patented to the same party December 12, 1880, No. 235,670, and is specifically claimed in his Patent No. 240,094, dated April 12, 1881.

Claim.—As an improved composition for the manufacture of varnish, the herein-described deodorized anhydrous rapidly-drying product of petroleum and rosin, mixed together.

250,333.—**Process of Manufacturing Crystallized Anhydride of Grape Sugar from a watery solution of Grape Sugar.** Arno Behr, Jersey City, N. J. Filed Oct. 18, 1881.

Claim.—The process of manufacturing crystallized anhydride of grape-sugar, herein described, which consists in forming a solution containing about 15 per cent. of water, with grape sugar of upward of 95 per cent. in purity, and in filling such solution or mass into molds of ordinary construction, and cooling it to a temperature preferably of about 100° Fahrenheit, and holding it at about that temperature for from twelve to twenty-four hours, or until thorough crystallization has taken place, and in then expelling the liquid therefrom by means of a centrifugal machine.

49,650.—**Package for Holding and Transporting Liquids.** Hugh Mat-tullath, San Francisco, Cal. Filed Feb. 8, 1881.

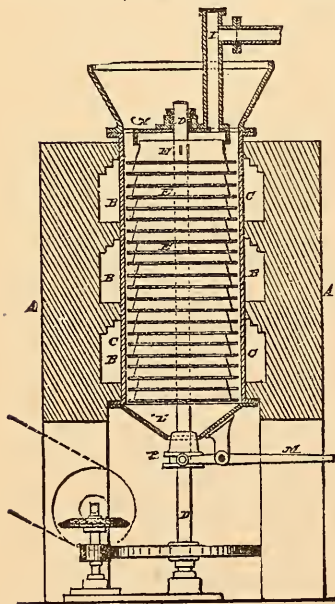


Brief.—Solder or other material is run into the space between the tin and wooden heads around the faucet and vent, so as to unite them rigidly to the wooden head. Fills the space between the wooden and metal barrels with some cement in-soluble in petroleum and at the same time elastic. Prefers a cement having glue as a basis.

Claim.—1. A metallic cask having its end portions formed of sheets having tapering and gradually deepening corrugations from the bilge, where they are united toward the chimes or ends, whereby the proper curvature and shape is produced, and having heads secured to each end.

2. A metallic cask having its end portions formed of sheets having tapering and gradually deepening corrugations from the bilge to the chimes or ends, in combination with a central band, to which the end portions are united, and by which the length of the metallic cask is regulated and the whole strengthened.

249,688.—**Apparatus for Drying Spent Dyewood, Etc.** Henrik C. F. Stormer, Paris, France. Filed July 22, 1881.



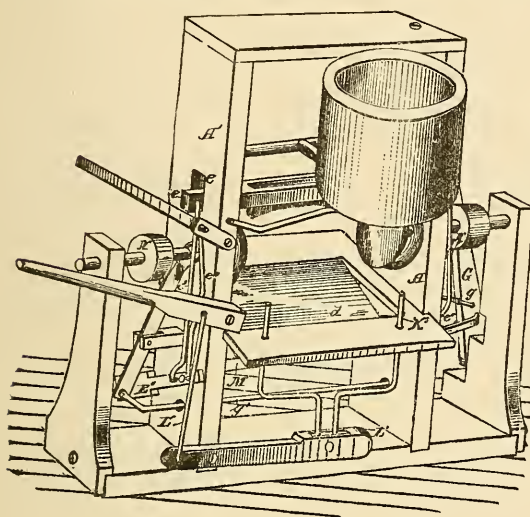
Claim.—1. In an apparatus for the drying of comminuted material, such as spent dyewoods, spent tan bark, etc., the combination, with a vertical retort of cylindrical shape mounted within a suitable furnace and provided with a receiving hopper at the top and discharge hopper at the bottom, of a set or series of open overlapping cones mounted, as described, upon a rotating vertical shaft within the retort, so as to leave an open annular space between the bottom of each cone and the wall of the retort, and between the top rim of each cone and the bottom rim of the cone next above.

2. The herein-described apparatus for the drying of comminuted material, such as spent dyewoods, spent tan bark, etc., the same consisting of the oven or furnace A, having flues B, cylindrical retort C, having the receiving hopper K, discharge hopper L, annular top plate H, and discharge pipe I, vertical shaft D, having the cones E, arranged as described, and each provided with the shelves or ledges F F', means for rotating the shaft D, and the vertically adjustable collar P, for regulating the outlet of the discharge hopper.

250,035.—**Manufacture of Artificial Indigo.** Adolf Baeyer, Munich, Bava-ria, Germany, assignor to the Badische Anilin und Soda Fabrik, Mannheim, Germany. Filed July 21, 1881.

Claim.—As a new article of manufacture, the dye stuff or coloring matter termed "indogenic acid," produced by treating an ether compound of orthonitrophenylpropionic acid with a reducing agent, such as ammonium sulphohydrate, followed by the action of muriatic acid and a dilute solution of caustic soda.

249,935.—**Barrel-Painting Machine.** Thos. A. Heward, Cleveland, and Chas. J. Everard, Canton, Ohio. Filed Dec. 13, 1880.

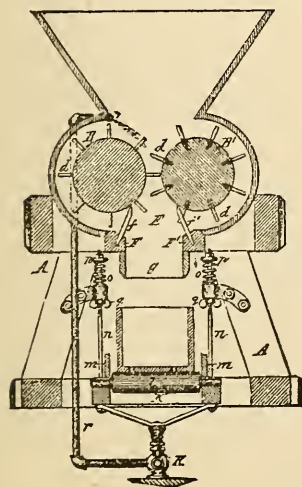


Brief.—The machine is placed at the bottom of a chute, down which the barrels roll in succession upon the inclined plane against the stop. A lever is operated to cause the clamps to bear against the ends of the barrel and thereby rotate it. Another lever bears down the brush to paint the barrel.

250,071.—**Process of Manufacturing Albumen.** Uno H. Hillman, New York, N. Y., assignor of one-half to Edward Emerson Waters, same place. Filed Jan. 3, 1881. Renewed Oct. 12, 1881.

Claim.—The herein-described process of manufacturing albumen from fish-spawn, consisting in adding to the crushed spawn sufficient water to dissolve the albumen and evaporating the albuminous water by boiling under a vacuum at a temperature sufficiently low to prevent coagulation.

250,143.—**Machine for Reducing Starch.** Roger W. Graves, Buffalo, N. Y. Filed July 15, 1881.



Claim.—An apparatus for converting the solid starch as it comes from the settling-tank into a semi-liquid state, so that it may be readily molded for baking, which consists of a pair of disintegrating-rollers provided with circumferential rows of teeth or projections and inclosed in a suitably-shaped box open at the top and bottom, and means for regulating the supply of water to be mixed with the starch as it is being disintegrated by the rollers.

250,036.—Manufacture of Artificial Indigo. Adolph Baeyer.

Brief.—The invention consists in the formation of a new coloring-matter from which indigo-blue may be formed.

Claim.—As a new article of manufacture, the coloring-matter or dye-stuff termed "indogen," produced by the action of heat upon indogenic acid.

250,038.—Manufacture of Crimson Coloring-Matter. Heinrich Baum, Höchst-on-the-Main, assignor to Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Dec. 20, 1880.

Brief.—This coloring matter is derived from the reaction of disulpho-betanaphthol sodium salt upon a diazo compound derived from amido-cresolmethylic ether.

250,201.—Sulphonated Compound of Rosaniline. Heinrich Caro, Mannheim, Baden, Germany, assignor to Badische Anilin und Soda Fabrik, same place. Filed March 28, 1878, Patented in England Oct. 8, 1877; in Germany Dec. 16, 1877, and in France, Feb. 19, 1878.

Brief.—Forms a new compound, a substitution compound, in which sulphuric acid unites with fuchsine to produce a tri-sulpho acid rosaniline salt.

250,247.—Manufacture of Rosaniline Colors. John Holliday, Brooklyn, N. Y., assignor, by mesne assignments, to Read Holliday & Sons, Huddersfield, England. Filed Dec. 24, 1877.

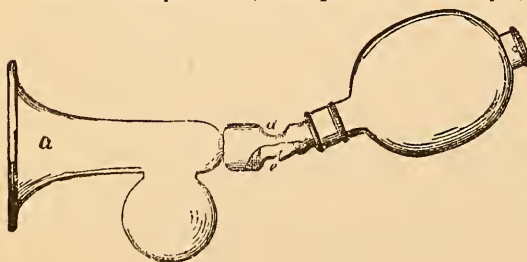
Claim.—The sulpho-conjugated compound of rosaniline possessing the properties specified, as a new article of manufacture.

250,302.—Process of Preparing Colors for Ornamenting Fabrics. William H. R. Toye, New York, N. Y., assignor to the Fabric Ornamenting and Manufacturing Company, same place. Filed Aug. 15, 1881.

Claim.—The process consists in forming a pasty mixture of pulverized starch, powdered talc, and acid, adding suitable commercial colors thereto, to produce the tint required, drying the same by moderate heat, and finally, sifting or pulverizing the compound.

250,335.—Manufacture of Starch and Syrup or Sugar from Corn. Arno Behr, Jersey City, N. J., and Henry C. Humphrey, New York, N. Y. Filed Sept. 24, 1881.

Claim.—The process of manufacturing starch and glucose from corn, herein described, which consists in manufacturing starch by the usual methods, in which starch tables or troughs are employed, and in treating the fluid which overflows from the tables or troughs with an amount of sulphuric or other strong acid, sufficient to convert into syrup or sugar the starch which is present in such overflowing fluid.

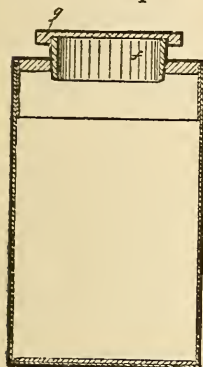
250,452.—Breast Pump. Daniel C. Perkins, Providence, R. I., assignor of one-half to Joseph Davel, same place. Filed May 9, 1881.

Claim.—The combination, with the cup *a*, and bulb *c*, of the flexible connecting tube *d*, having a cut or air-vent formed therein, substantially as described, which is adapted to be opened and closed by the bending of the tube.

250,362.—**Method of Settling Starch Liquor.** Henry C. Humphrey, New York, N. Y. Filed Sept. 22, 1881.

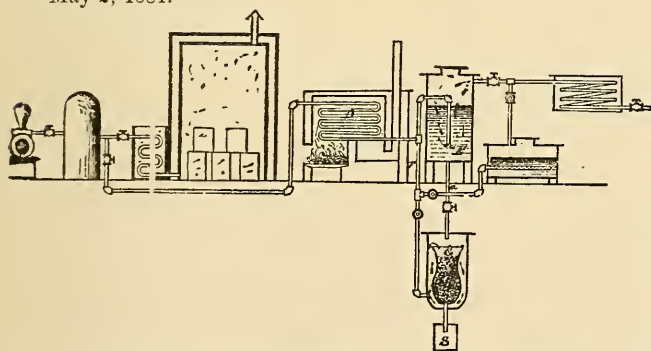
Claim.—The method of separating starch from raw starch liquor, which consists in first running the raw liquor over a comparatively short starch table, and in collecting and concentrating the overflow therefrom, and in then running such concentrated liquor again over a table.

250,469.—**Paper Bottle.** Alphonso C. Williams, Cambridgeport, Mass. Filed July 11, 1881.



Claim.—The paper bottle having the thicker paper-board top to fit the top of the side pieces, and provided with an opening for a stopper, combined with the paper stopper having a tubular neck and many-sided or angular head *g*.

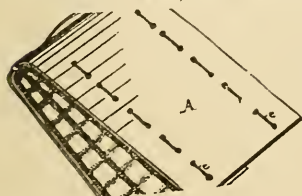
250,524.—**Process of Machinery for Refining and Purifying Paraffine and other Waxy Materials.** Daniel T. Gray, Brooklyn, assignor, by mesne assignments, to John A. Steutenburgh, New York, N. Y. Filed May 2, 1881.



Claim. — The process herein described for purifying and refining paraffine and other waxy matters, consisting, essentially, in subjecting the crude wax to a solvent and heated air, under pressure, in a closed vessel, passing the mixture through a filter provided with a heating-

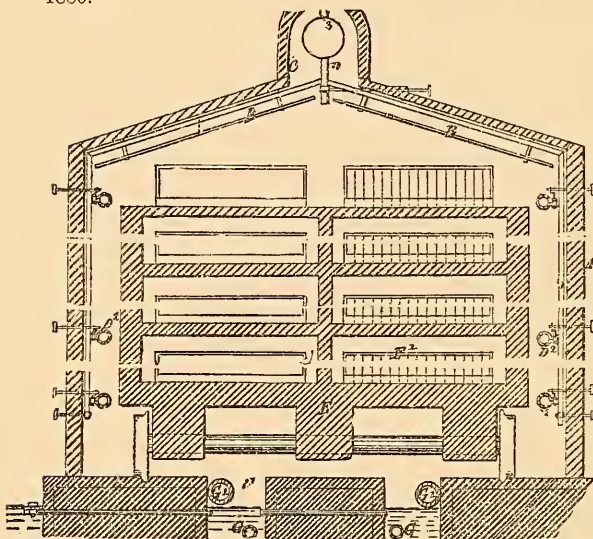
jacket, to remove the earthy matters, then freezing the wax in a closed chamber, then compressing it to remove the solvent, and then again melting it by steam or hot air to drive off all traces of the solvent.

251,123.—**Oil-Cake Mat or Mold.** Arthur A. Maginnis and Joseph McCarron, New Orleans, La. Filed Oct. 11, 1880.



Claim.—The improved mat or mold, consisting of the leather cover *A*, the outer leaves *b d*, made of hair, with borders of the same material, secured to the said cover by means of the lacing *e*, and the central leaf constructed entirely of hair.

250,605.—**Manufacture of White Lead.** Wm. Thompson, Limehouse, County of Middlesex, England. Filed Aug. 15, 1881. Patented in England Oct. 6, 1880.

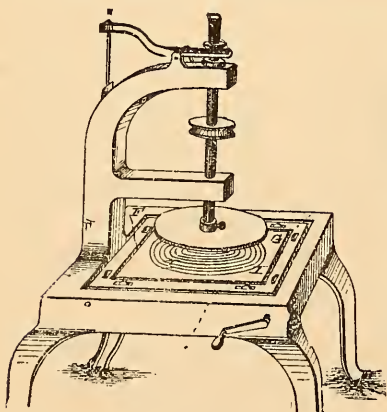


Claim.—1. The process of converting metallic or blue lead into white lead, that is to say, first submitting metallic lead in a closed chamber to the combined action of acetic acid vapor and atmospheric air in a temperature ranging from 80° to 120° Fahrenheit, or thereabout, for one-sixth to one-fourth of the time required for completing the conversion of the lead, and subsequently supplying to the closed chamber, in addition to the acetic acid vapor, carbonic acid gas and atmospheric air and maintaining the supply until the conversion is completed, the admission of the air and gas being so con-

trolled as to provide for their diffusion through the chamber without the creation of disturbing currents.

2. In an apparatus for manufacturing white lead, the combination of a converting chamber, steam pipes arranged therein for heating the same, globes or chambers arranged in said converting chamber and adapted to be heated by the heat of said chamber, pipes for conducting carbonic acid gas and air to said globes or chambers, and pipes, arranged substantially as described, for conducting the heated carbonic acid gas and air and distributing them throughout the converting chamber.

250,710.—**Machine for Manufacturing Pills.** Wm. N. Clark, New York, N. Y. Filed Nov. 5, 1881.



Claim.—1. In a machine for making pills, a rotating cutting disk having concentric circular grooves.

2. In a machine for making pills, a stationary plate or disk having concentric circular grooves.

3. In a machine for making pills, the combination of two plates or disks having concentric circular grooves facing and matching each other.

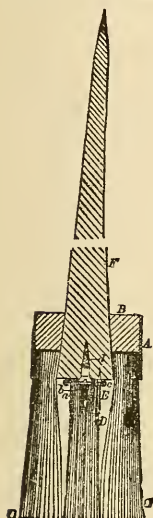
4. In a machine for making pills, the combination of a stationary and a rotary plate or disk having circular concentric grooves facing and matching each other.

5. In a machine for making pills, the combination with a horizontal cutting and shaping disk or plate, of a co-operating disk or plate mounted in a hinged bed-plate below the upper disk or plate to adapt the bottom disk or plate to be tilted, with its bed-plate, in a downward direction from the upper disk or plate.

6. In a machine for making pills, the hinged bed-plate having a detachable disk or plate provided with concentric circular grooves.

7. As an improvement in machines for making pills, the combination, with a suitable frame, of a hinged bed-plate carrying a detachable plate having concentric circular grooves, a vertical shaft carrying a detachable disk having concentric circular grooves, and mechanism for operating said shaft.

250,577.—**Brush.** John R. Rennous, Baltimore, Md. Filed Oct. 28, 1881.



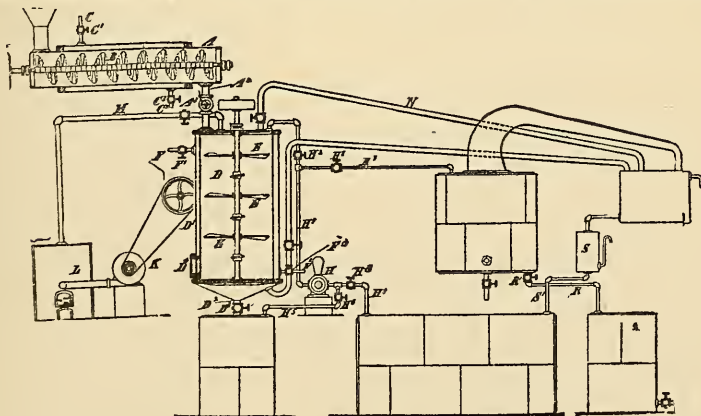
Claim.—1. In combination with the handle of a paint brush made separate from the head-block and adapted to be driven through the bristles, the head-block to secure the former with the ferrule, a supplemental brush which consists of a mass of bristles having a solid or full center, fastened within a ferrule by means of a plug driven into the said bristles from the butt end thereof.

2. As means for securing the bristles D of the supplemental brush to the handle F, the flanged thimble *a* and plate *c*, the edge of the latter being crimped over the flange of the former, and the screw or nail *d*.

250,830.—**Lantern Oil.** Wilber R. Meeds, Newark, Ohio. Filed Oct. 18, 1881.

Claim.—A lantern oil composed of the following ingredients, mixed in about the proportions stated; one gallon lard oil, one gallon sperm burning oil, three and three-quarters pounds strained tallow, and one-half pint turpentine.

251,088.—**Extraction of Oil and Oleaginous Matters from Vegetable and Animal Matters.**—Wm. Bell, New York, N. Y. Filed June 21, 1881.



Claim.—1. The process of extracting oil and oleaginous matter from hominy chop or other vegetable material, or from animal material, consisting in first comminuting the material, next heating and agitating it by itself, in subsequently maintaining it heated and agitating it, and meanwhile passing through it naphtha, and then driving off the remaining naphtha by passing heated air directly through the material.

2. The process of extracting oil and oleaginous matter from hominy chop and other vegetable material, or from animal material, consisting in first comminuting the ma-

terial, next heating and agitating it in a chamber by itself, then passing it to another chamber, where its heat is maintained, and there agitating it and adding to it naphtha, and then driving off the remaining naphtha by passing heated air directly through the material.

3. The combination of the chamber A, wherein the comminuted material is first placed, means for agitating the material in said chamber, a steam jacket whereby the material is heated, the chamber D, a pipe for delivering heated material from the chamber A to the chamber D, means for agitating the material in the chamber D, a steam jacket surrounding the chamber D, for maintaining the material therein in a heated condition, a pipe for introducing naphtha into the chamber D, and the blower K, furnace L, and pipe M, for supplying heated air to the chamber D.

251,054.—**Paint Compound for Metallic Surfaces.** Eugene Jones, Gold Hill, Nev. Filed July 18, 1881.

Claim.—A compound for covering metallic surfaces, consisting of tar, tallow, black pitch, rosin, and gallic acid.

251,137.—**Making Soap.** Frederick R. Robinson, St. Louis, Mo., assignor of one-half to George H. Shields. Same place. Filed April 22, 1880.

Claim.—1. The making of soap by the combination of the pomace or refuse of the castor-bean after the oil is expressed with rosin and an alkali.

2. The combination in soap-making of the pomace or refuse of the castor-bean after the oil is expressed with tallow or other oleaginous substances usually used in making soaps, rosins, and an alkali.

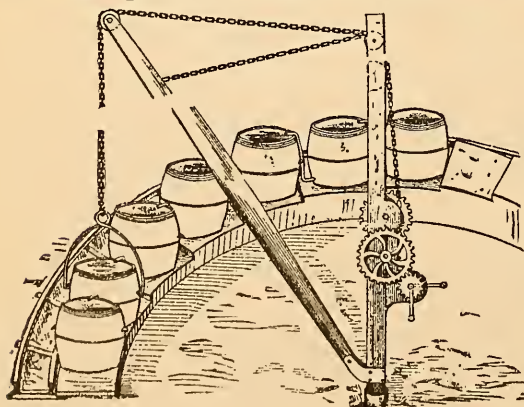
251,145.—**Explosive Compound.** Gustave von Planitz, San Francisco, Cal., assignor to the Nitorsine Manufacturing Company. Same place. Filed Jan. 19, 1881.

Claim.—A base for blasting powders and other explosives, consisting essentially in mixing nitric acid and water, raising the mixture to the boiling-point, spreading over the surface of the liquid pulverized rosin, skimming off the surface the resultant soft foamy product and drying it.

251,163.—**Dye-Stuff or Coloring Matter.** Heinrich Baum, Höchst on-the-Main, Germany, assignor to Farbwerke, vormals Meister, Lucius & Bruning. Same place. Filed Nov. 2, 1881.

Claim.—A new article of manufacture, coloring matter, for producing a coloring matter or dye-stuff by the reaction of the disulpho-betanaphtholic sodium salt soluble in alcohol upon the diazoic derivative of aniline.

251,701.—**Extracting Juices from Bagasse, Plants, &c.** Peter Collier, Washington, D. C. Filed Oct. 14, 1880.



Claim.—1. A leach consisting of a series of movable tanks connected by suitable tubing arranged on a series of fixed steps greater in number than the tanks, thereby permitting the addition of tanks filled with fresh material at the bottom of the series and the removal of the spent tanks at the top.

2. In a leaching apparatus, the combination of two or more movable tanks with three or more fixed steps.

3. In a leaching apparatus, the combination of the above-described series of tanks and steps and a central derrick for moving said tanks.

251,187.—**Zinc Pigment and the Process of Making the Same.** John Cawley, Newark, N. J., assignor to Hore, Barnett & Co., New York, N. Y. Filed April 12, 1881.

Claim.—1. The method consists in intimately mixing precipitated sulphide of zinc and precipitated sulphate of barium, or its equivalent, with oxide of magnesium, igniting the mass at a red heat, and then reducing it to powder.

2. The improved pigment, composed of precipitated sulphide of zinc, precipitated sulphide of barium, or its equivalent, and oxide of magnesium.

251,279.—**Manufacture of Paint for Ships' Bottoms, &c.** Samuel R. Percy and Henry A. Mott, Jr., New York, N. Y., assignors of two-thirds to said Percy and one-third to said Mott. Filed Jan. 28, 1881.

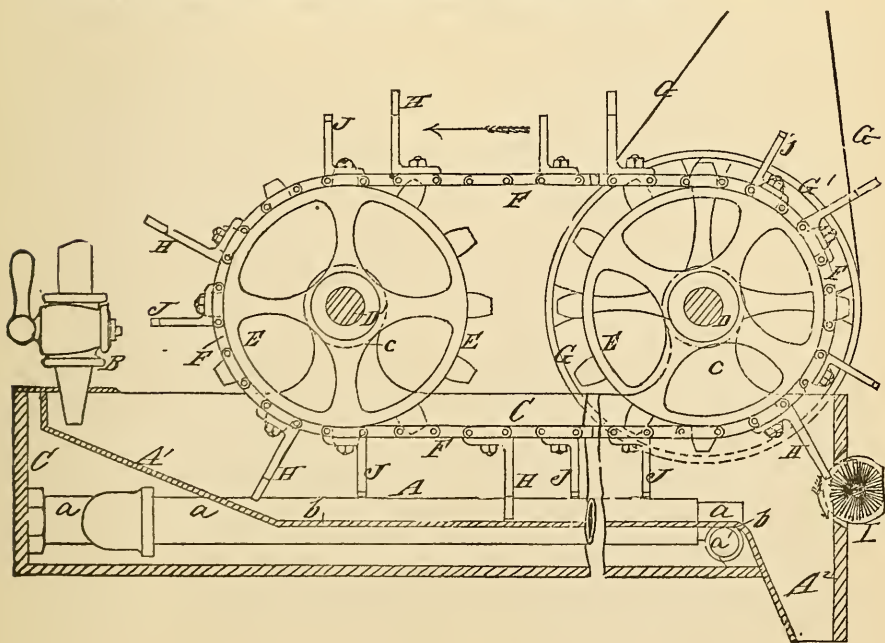
Brief.—The paint is particularly designed for bottoms of ships, both iron and wood, and timber used in the constructions of docks, piles, &c., to prevent the growth of grass, barnacles, &c., and insects from boring into the wood. It consists in incorporating with any metallic or other paint picric acid, pierate of lead, or any compound of picric acid, or using picric acid alone for the priming coat and an insoluble paint as a secondary coat.

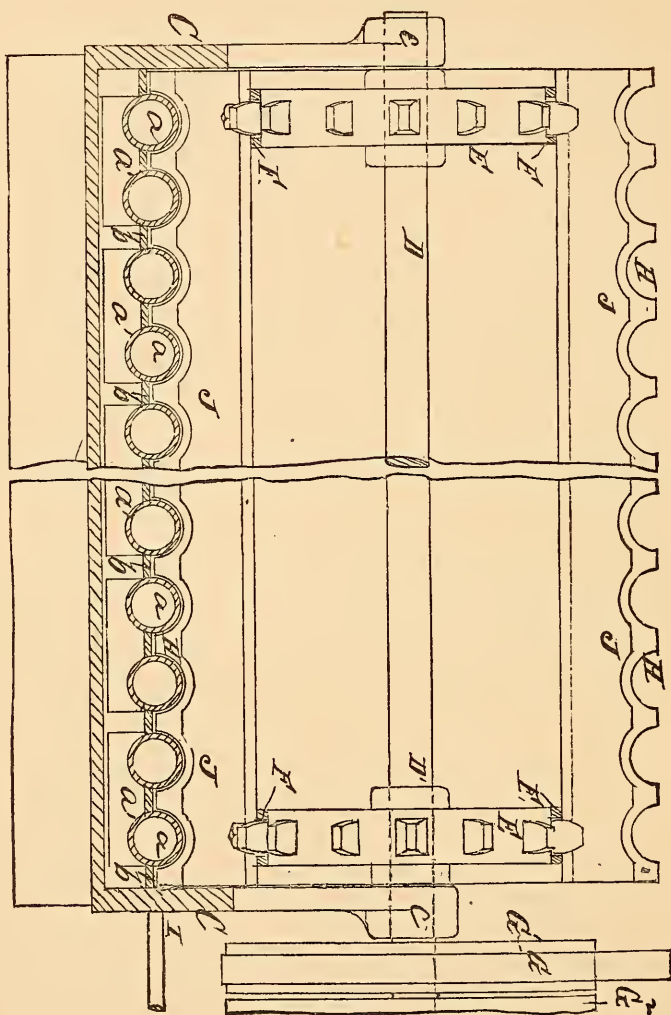
251,512.—**Process for Congealing Paraffine.** William Bell, N. Y., Filed Sept. 27, 1881.

Claim.—1. The process of congealing paraffine or other liquid, and separating the crystals or solid matters therefrom, consisting in passing the paraffine or other liquid over a hollow table or bed through which circulates a cooling agent, by means of scrapers or blades which keep the liquid evenly distributed, and remove the crystals or solid matters as they form.

2. In a machine for separating the crystals from paraffine or other liquid, the combination of a hollow bed or table through which a cooling agent may be circulated, blades or scrapers and mechanism for moving said blades or scrapers along, and in close proximity to said hollow table or bed.

3. In a machine for separating crystals from paraffine or other liquid, the combination of a hollow table or bed through which a cooling agent may be circulated, an endless apron or chains, and drums or wheels therefor, and scrapers attached to said apron or chains, and passing over and in close proximity to said table or bed.



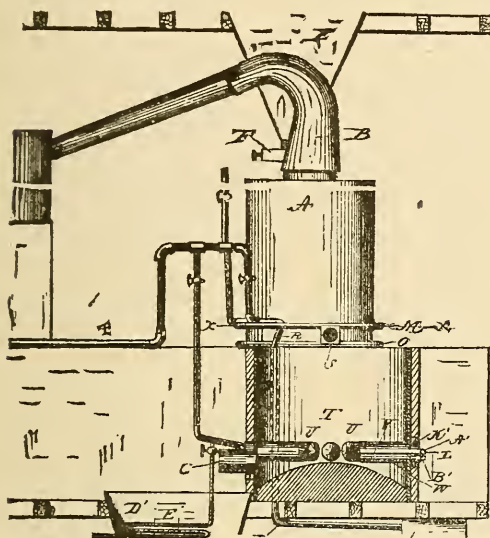


4. In a machine for separating crystals from paraffine or other liquid, the combination of a hollow bed or table through which a cooling agent may be circulated, an endless apron or chains, and drums or wheels therefor, scrapers attached to said apron or chains, and passing over and in close proximity to said bed or table, and levelers or leveling blades attached to said apron or chains between said scrapers, and having a less projection.

5. In a machine for separating crystals from paraffine or other liquid, the combination of a hollow table or bed through which a cooling agent may be passed, an endless apron or chains and drums or wheels therefor, scrapers attached to said apron or chains, and passing over and in close proximity to said table or bed, and a brush with which said scrapers come in contact and by which the crystals are removed from them.

6. The combination of the table or bed A, which comprises circulating pipes *a*, for the passage of a cooling agent having drop connections *a*¹ at their ends, and pieces, *b*, fitting between the pipes, the chute, A², at the end thereof, the shafts D D¹, the chain wheels E, the chains F, the scrapers H, and levelers J, attached to said chains and the rotary brush I.

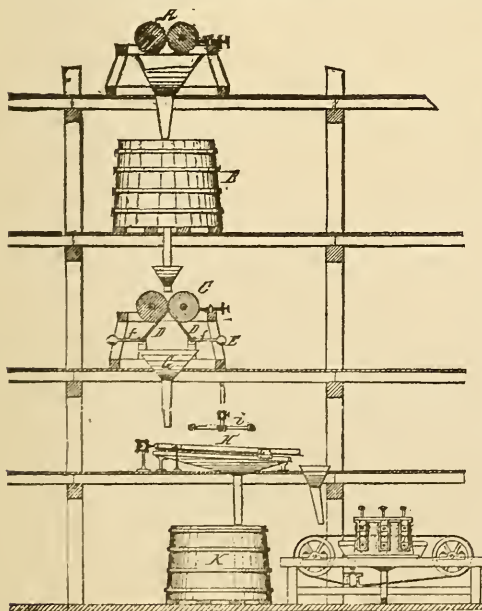
251,816.—Turpentine Still. Leonard Bellingrath, Castleberry, Ala. Filed Oct. 10, 1881.



Claim.—1. The combination, with the still, of the perforated steam-pipes and the radial heating tubes and connecting pipes, and the annular pipes communicating respectively with the radial tubes and pipes, and with a steam generator and trap.

2. In combination with the still and the steam supply and eduction pipes, the evaporating vessels, the radial steam heating tubes located in the still and in the evaporating vessel, and the induction and eduction pipes.

251,827.—Method of and Apparatus for Obtaining Starch from Grain. Gottfried Burkhardt, Buffalo, N. Y. Filed Aug. 6, 1881.



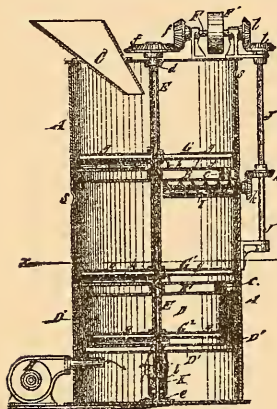
Claim.—1. The herein described method of obtaining starch from grain, which consists in first coarsely grinding or cracking the grain, then steeping the broken grain, then crushing the steeped grain between rolls, whereby the starch is reduced to powder and the bran flattened out to flakes, and then separating the starch from the bran by sifting.

2. In an apparatus for manufacturing starch from grain, the combination of a preliminary reducing apparatus A, whereby the grain is coarsely broken, a steep B, in which the broken grain is softened, a pair of crushing-rolls C, which operate upon the steeped grain, and whereby the starch is reduced to powder and the bran to flakes, and a sieve H, whereby the bran is separated from the starch.

3. In an apparatus for manufacturing starch from grain, the combination of corrugated preliminary reducing-rollers A, a steep B, smooth crushing-rolls C, and a sieve H.

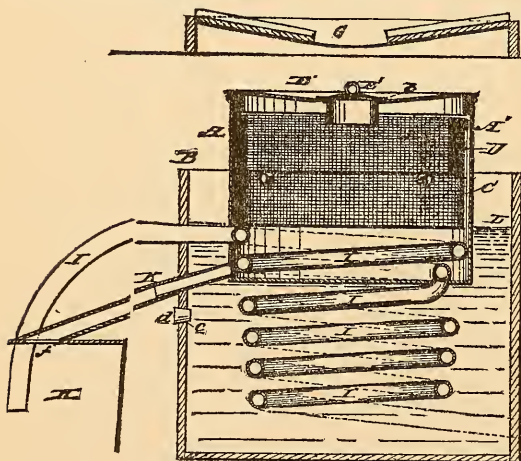
4. The combination, with the crushing-rolls C, of self-adjusting scraper-plates D.

- 251,847.—**Machine for Drying Starch Refuse and other Substances.** Wright Duryea, Glen Cove, N. Y. Filed Dec. 29, 1880.



The combination, in a drying machine, of an upright trunk or cylinder divided at different heights by hollow floors, pipes for supplying a heating agent to said hollow floors, an upright hollow rotary shaft, blades or scrapers rotating with said shaft above said floors for distributing material upon said floors and for discharging it through openings in said floors, perforated pipes projecting radially from said shaft above said floors, and means for forcing air through said shaft and pipes, &c.

- 251,865.—**Apparatus for the Manufacture of Turpentine and Rosin.** Allen Garner, Americus, Miss. Filed July 25, 1881.



Claim.—1. The combination of the vessel A', the cylindrical wire screens C D, the concave cover E, having central opening E', the superposed concave screen G, and the worm I, to strain the turpentine.

2. The combination, with the condensing tank B, and still H, of the rectifier A, provided with screens C D, and pipe K, and set within the said tank, and worm I, passed through said rectifier and tank.

- 251,992.—**Process of Manufacturing Glycerine from Soap Liquor.** Jessie P. Battershall, New York, N. Y. Filed Nov. 5, 1881.

Claim.—1. In the manufacture of glycerine from waste soap liquor, the processes of neutralization, evaporation, addition of carbonate of lime, means for removing rosin and fat, use of the centrifugal machine and distillation.

2. The application of the centrifugal machine for the separation of glycerine from waste soap liquor.

3. In the manufacture of glycerine from waste soap liquor, the use of the centrifugal machine in combination with the process of evaporation.

4. In the manufacture of glycerine from waste soap liquor, the combination of the use of the centrifugal machine with the process of evaporation and distillation.

5. In the manufacture of glycerine from waste soap liquor, the combination of the use of the centrifugal machine with the process of neutralization, evaporation and distillation.

6. In the manufacture of glycerine from waste soap liquor, the combination of the use of the centrifugal machine with the use of methylic or ethylic alcohol.

7. In the manufacture of glycerine from waste soap liquor, the use of the centrifugal machine with means for clarifying the products thereof.

8. In the manufacture of glycerine from waste soap liquor, the use of carbonate of lime.

9. In the manufacture of glycerine from waste soap liquor, the combination of the use of the centrifugal machine with the process of separating rosin and fat by straining through cloth filter bags.

251,938.—**Process of Removing Flocculent Matter from Spent Acids.** Frank V. Pool, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed March 26, 1880.

Claim.—The within-described process of removing flocculent matter from spent acids which have been used in the treatment of soluble fiber, which consists in introducing into the acid solution barium sulphate in powdered form and permitting the whole to stand until precipitation has taken place.

251,947.—**Paint, Whitewash, and other Brushes.**—James A. Reed and Calvin D. Reed, Ayer, Mass. Filed April 4, 1881.



Claim.—1. A process of making brushes, consisting in cementing bristles to thin strips of rubber or its equivalent, in winding the strips so prepared on to the brush handle, and in subjecting the whole to pressure.

2. A brush having its bristles secured in place by thin strips of rubber or its equivalent.

3. A brush having its bristles secured to a thin strip or strips of rubber or its equivalent wound around the base of the handle.

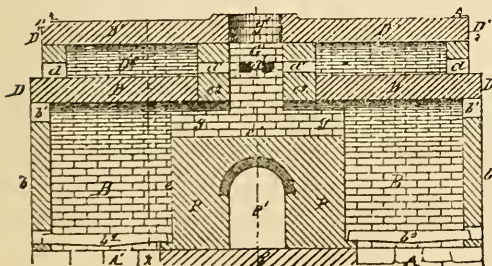
4. A brush having its bristles secured to a thin strip or strips of rubber or its equivalent wound around the base of the handle, the several layers of rubber being tightly compressed.

5. In a brush, the combination, with a handle having a notched base, of strips of rubber having bristles secured thereto and wound upon the notched base of a handle.

6. In a brush, the combination, with the bristles, of an outwardly projecting flange formed of several layers of a thin rubber band tightly wound around the butts of the bristles.

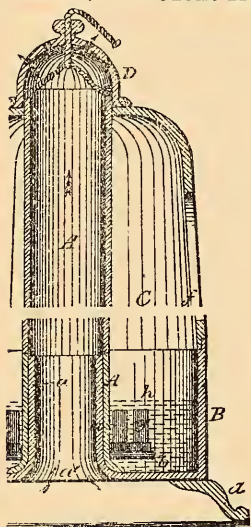
REISSUES.

Re-Issue 9,950.—**Glass-House Furnace.** Joseph J. Gill, Steubenville, Ohio. Filed Nov. 3, 1881. Original No. 224,896, dated Feb. 24, 1880.



Claim.—In a gas-burning furnace, a gas-producer arranged directly beneath the bench, chamber, or inclosure where the heat is to be applied, in combination therewith and with an intermediate air-chamber extending over the whole or the greater part of the upper surface of the producer arch, with ports in the walls of such chamber for supply of air thereto, whereby the arch is exposed on its back to the action of air and conduction of heat thereto from the bench is arrested.

Reissue 9,076.—**Ozone Machine.** Hannah Milson, Buffalo, N. Y. Filed Nov. 3, 1880. Original No. 135,040, dated Dec. 5, 1876.



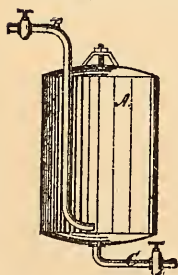
Claim.—1. The ozone apparatus constructed with the base B, with the tube opening or openings *a a'* therein, the central tube or tubes A, with the phosphorus holder *b*, the separating ozone chamber C, and cap D.

2. The process herein described, which consists in the generation, purification and emission of ozone by the slow oxidation of phosphorus in a chamber with inclosing walls of porous material, such as earthenware, or its equivalent, whereby the separation and retention of the acid fumes and the egress of ozone are effected.

Reissue 9,982.—**Manufacture of Metallic Compounds from Sulphur and Sulphides.** John B. Spence, London, England, assignor to J. P. Upham, trustee, Boston, Mass.; said Upham assignor to the National Belvedere Metal Company, of Hartford, Conn. Filed Nov. 17, 1881. Original No. 238,980, dated March 15, 1881. Patented in England July 3, 1879; in France August 13, 1879; in Belgium, March 13, 1880; and in Italy March 12, 1880.

Claim.—The process consists in reducing natural metallic sulphides to a pulverulent condition and combining them with sulphur instead of fusion.

Reissue 10,004.—**Manufacture of Cream of Tartar.** Guido Schnitzer, Schwabisch Hall, Wurtemberg, Germany, assignor, by mesne assignments, to the Royal Baking Powder Company, New York, N. Y. Filed Dec. 1, 1880. Original No. 183,597, dated Oct. 24, 1876.



Claim.—1. The improvement in the art of treating argols to obtain a solution of the same, which consists in subjecting the argols while being dissolved to the pressure of steam.

2. The improvement in the art of treating argols to obtain a solution of the same, which consists in subjecting the argols while being dissolved to the pressure of steam admitted near the bottom of the vessels containing the argols.

3. The improvement in the art of obtaining cream of tartar from argols, which consists substantially of dissolving the argols in water under steam pressure, converting the tartrate of lime into bitartrate of potash by the aid of hydrochloric acid and chloride of potassium, and separating the cream of tartar after it has crystallized from the residual solution.

4. The process herein described of manufacturing cream of tartar by subjecting ground argols, together with hydrochloric acid and chloride of potassium, in a steam-tight vessel, to the direct action of compressed steam for the necessary length of time, and then allowing the solution to stand till the crystallization of the bitartrate of potassa is complete.

THE NEW YORK ADULTERATION ACT.

FOLLOWING is the text of the New York State Law to prevent the adulteration of food and drugs; it embodies the essential features of most of the adulteration laws of other States, and is identical with several:

SECTION 1. No person shall, within this State, manufacture, have, offer for sale, or sell any article of food or drugs which is adulterated within the meaning of this act, and any person violating this provision shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by fine not exceeding \$50 for a first offense, and \$100 for a second and subsequent offenses.

§ 2. The term "food," as used in this act, shall include every article used for food or drink by man. The term "drug," as used in this act, shall include all medicines used for internal or external use.

§ 3. An article shall be deemed to be adulterated within the meaning of this act—

a.—In the case of drugs:—1. If, when sold under or by a name recognized in the United States Pharmacopœia, it differs from the standard of strength, quality, or purity laid down therein. 2. If, when sold under or by a name not recognized in the United States Pharmacopœia, but which is found in some other pharmacopœia or other standard work on *Materia Medica*, it differs materially from the standard of strength, quality, or purity laid down in such work. 3. If its strength or purity fall below the professed standard under which it is sold.

b.—In the case of food or drink:—1. If any substance or substances has or have been mixed with it so as to reduce or lower or injuriously affect its quality or strength. 2. If any inferior or cheaper substance or substances have been substituted wholly or in part for the article. 3. If any valuable constituent of the article has been wholly or in part abstracted. 4. If it be an imitation of or be sold under the name of another article. 5. If it consists wholly or in part of a deceased or decomposed, or putrid or rotten, animal or vegetable substance, whether manufactured or not, or in the case of milk, if it is the produce of a diseased animal. 6. If it be colored, or coated, or polished, or powdered, whereby damage is concealed, or is made to appear better than it really is, or of greater value. 7. If it contain any added poisonous ingredient, or any ingredient which may render such article injurious to the health of a person consuming it: Provided, that the State Board of Health may, with the approval of the Governor, from time to time declare certain articles or preparations to be exempt from the provisions of this act: And, provided further, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food, provided that the same are not injurious to health and that the articles are distinctly labelled as a mixture, stating the components of the mixture.

§ 4. It shall be the duty of the State board of health to prepare and publish from time to time, lists of the articles, mixtures or compounds declared to be exempt from the provisions of this act in accordance with the preceding section. The State Board of Health shall also from time to time fix the limits of variability permissible in any article of food or drug, or compound, the standard of which is not established by any national pharmacopœia.

§ 5. The State Board of Health shall take cognizance of the interests of the public health as it relates to the sale of food and drugs and the adulteration of the same, and make all necessary investigations and inquiries relating thereto. It shall also have the supervision of the appointment of public analysts and chemists, and upon its recommendation whenever it shall deem any such officers incompetent, the appointment of any and every such officer shall be revoked and be held to be void and of no effect. Within thirty days after the passage of this act, the State Board of Health shall meet and adopt such measures as may seem necessary to facilitate the enforcement of this act, and prepare rules and regulations with regard to the proper methods of collecting and examining articles of food or drugs, and for the appointment of the necessary inspectors and analysts; and the State Board of Health shall be authorized to expend, in addition to all sums already appropriated for said Board, an amount not exceeding ten thousand dollars for the purpose of carrying out the provisions of this act.

§ 6. Every person selling or offering or exposing any article of food or drugs for sale, or delivering any article to purchasers, shall be bound to serve or supply any public analyst or other agent of the State or local Board of Health appointed under this act, who shall apply to him for that purpose, and on his tendering the value of the same, with a sample sufficient for the purpose of analysis, any article which is included in this act, and which is in the possession of the person selling, under a penalty not exceeding fifty dollars for a first offense, and one hundred dollars for a second and subsequent offenses.

§ 7. Any violation of the provisions of this act shall be treated and punished as a misdemeanor; and whoever shall impede, obstruct, hinder, or otherwise prevent any analyst, inspector or prosecuting officer in the performance of his duty shall be guilty of a misdemeanor, and shall be liable to indictment and punishment therefor.

§ 8. Any acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

§ 9. All the regulations and declarations of the State Board of Health made under this act, from time to time and promulgated, shall be printed in the statutes at large.

§ 10. This act shall take effect at the expiration of ninety days after it shall become a law.

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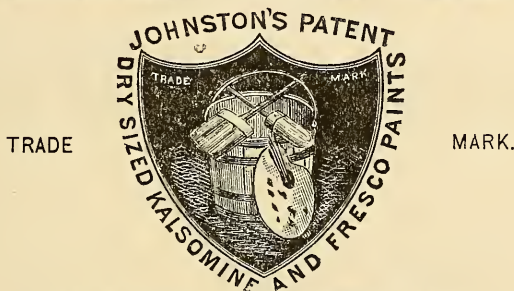
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N. B.—As the bill to prevent the Adulteration of Drugs and Food has become a law in this State and New Jersey, mainly through the efforts of this journal, this subject will be made a special feature. It will have a department in charge of a well-known Chemist and a well-known Pharmacist, in which will be discussed the questions that will arise in the enforcement of these laws.

OPINIONS OF THE PRESS.

The Sanitary Engineer has opened a new field of literature of the most practical and valuable kind. It has already worked radical changes in practice, and through its influence a very desirable modification of the laws regarding the adulteration of food, drugs, etc., has been brought about. It treats upon matters of vital interest and should be encouraged by every one who has any regard for health, and will be found very valuable, and the price is only nominal in comparison with the information which it affords.—*Boston Journal of Commerce.*

The excellent paper published in this city, and called *The Sanitary Engineer*, might add to its title that of the Practical Philanthropist, for such it proves itself to be in its constant and clear exposure of the wrongs and dangers of many of our domestic and municipal arrangements. It has just united with Messrs. D. Willis James, F. B. Thurber, Henry E. Pellew, and Robert Gordon, gentlemen well known as of the truest public spirit, in offering a premium for the best design for a house for workmen.—*Harper's Weekly.*

The full text of the law to Prevent the Adulteration of Food and Drugs, which has been enacted by the Legislatures of New York and New Jersey, may be found in *The Sanitary Engineer* of this week, a journal which has been indefatigable in its efforts to protect the public against unwholesome food products and dangerous pharmaceutical preparations.—*New York Tribune.*

The Sanitary Engineer deserves great credit for its efforts—just crowned with success—to incorporate with the laws of this State and New Jersey a statute aimed at the punishment of adulteration in food and drugs.—*Syracuse Evening Herald.*

We cordially commend this publication, not only to plumbers, architects, house builders and owners, but to all citizens who desire clear information on a subject of vital import, and who wish to guard against the insidious approaches of diphtheria, and kindred diseases.—*Brooklyn Times.*

Referring to the passage of the Food Adulteration law, *The American Grocer* says it is but just to state that to the proprietor of *The Sanitary Engineer* is due the credit of conceiving, and, as chairman of the special committee appointed by the National Board of Trade, of carrying out the idea to its present degree of success.

A great compliment has been paid to American engineering by Mr. John Walter, of the *London Times*, who has addressed a letter to the editor of *The Sanitary Engineer*, of this city, requesting an opinion as to the system of ventilating sewers by perforations or open gratings in the streets. The compliment paid to American sanitary engineering by Mr. Walter's letter, is most flattering; but that it is deserved will not be questioned by those familiar with the merits of the authority Mr. Walter consulted.—*N. Y. Com'l Advertiser.*

The Sanitary Engineer shows an excellent appreciation of what may be done in the field of Sanitary Engineering, and a practical capability for doing it.—*Tribune.*

This journal has become the leading authority in this country upon sanitary questions.—*Ohio Medical Journal.*

How much architectural skill was drawn out by the Model School House Competition is shown by the issue of *The Sanitary Engineer* for March 15.

Some capital advice is tendered young doctors in an able editorial, and in "Unwise Food Legislation," mincemeat is made of a bill relating to adulterations in food and drink, recently introduced in the House of Representatives at Washington.—*N. Y. Mail.*

Prof. Chandler, when delivering a popular and most telling lecture on Sanitation, lately at the Cooper Institute, advised his hearers to subscribe to *The Sanitary Engineer*, a publication devoted to sanitation in all its phases. It contains the best thoughts of the best trained Sanitarians of the period, and gives plans and diagrams of the best ways of "piping," as experience has tested them.—*Congregationalist.*

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